

Knowledge Transfer for the Military Leader



**by
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Dedication

This book is dedicated to all U.S. Military personnel who have served in Iraq and Afghanistan, many which have given their lives, often without any notice or attention from the population which they serve and protect. Without their sacrifice and selfless dedication, our country would not be the peaceful and prosperous nation that it is today.

I would also like to dedicate this book to the *ultimate* military spouse, my wife Maria who chose to grace my life with hers. She has been with me since shortly after I joined the Army in 1972. Without her constant support and companionship over the years, often under very trying conditions, this book would not have happened.

Acknowledgments

"We are like dwarfs sitting on the shoulders of giants. We see more, and things that are more distant, than they did, not because our sight is superior or because we are taller than they, but because they raise us up, and by their great stature add to ours." Quote from the Metalogicon written in 1159 by John of Salisbury

I would like to acknowledge the following who have made this book possible.

The Battle Command Knowledge System (BCKS) at Fort Leavenworth, Kansas who brought me on as a contract facilitator and senior knowledge manager from 2005-2010. What I learned was because of them. During my time at BCKS they allowed me an unprecedented level of freedom to innovate and push the boundaries of knowledge transfer. Sadly, they quietly ceased to exist by being absorbed by the Center for Army Lessons Learned (CALL) at Fort Leavenworth on 1 October 2010. BCKS pioneered formal knowledge transfer operations in the U.S. Army and deserves credit and recognition for what they did. All military leaders owe them a debt of gratitude, although most don't realize it yet.

Dr. Rick Morris, Dr. Mike Prevou and the Prince of Darkness, Mr. Dave Nichols, for their knowledge management mentorship and continued friendship. I learned a lot from them.

Mr. Jerry Dillard for teaching me that each community of practice is unique with its own requirements and that different approaches can work.

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To the four officers (Kilner, Burgess, Allen and Schweitzer) who created CompanyCommand and wrote the first military specif-

ic book on communities of practice. They started it all. It was through their efforts that BCKS was activated in 2004.

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LTC Liam Hale of the Australian Army for giving me a singular epiphany moment on structured socialization and how it works.

To the Israeli military for showing me that knowledge transfer doesn't have to be complex to work.

My fellow knowledge management colleagues at BCKS.

The many Soldiers and military civilians, you know who you are, who voluntarily made the time to transfer your experience and knowledge to me and patiently answered my many questions through many interviews.

Introduction

Like many book projects this one took a different direction than originally intended. I started out with the idea of writing a book on military knowledge management for military knowledge management professionals. A debate in late fall of 2010 on the U.S. Army Knowledge Management Network (KMNet) online Community of Practice about the direction of knowledge management in the U.S. Army changed both my intention and the direction of this book. It was through this debate that I realized that military leaders at all levels have a far more pressing need, especially in time of war, to understand and successfully implement rapid knowledge transfer operations in their units.

Early on I decided to make this a free eBook instead of a commercial “for sale” book. Doing this is my professional contribution to the U.S. military in time of war.

This book is not meant to be an academic text on the subject of military knowledge transfer, but a practical guide book designed to transfer my first hand experiential knowledge about military knowledge transfer operations directly to you as a military leader, for use in your unit.

This experiential knowledge was gained while I was at the Battle Command Knowledge System (BCKS) at Fort Leavenworth, Kansas from 2005-2010 as a contract facilitator and senior knowledge manager. It was at BCKS that we experimented and found what works, and what doesn’t, and under what conditions.

I have deliberately kept this book non-technical so you don’t need to be a rocket scientist to make use of it. If you apply what you learn here in a common sense way to your unit it will make your unit *far* more successful at what it does than a unit that doesn’t, and as a bonus it will also substantially improve human communications throughout your organization as well.

Constructive feedback and comments are encouraged and welcome. I can be reached at the email address below.

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Knowledge and Experience Transfer

The Army experiment begins

On March 1st of 2005 I went to work as a contract knowledge manager and facilitator for a new command just recently activated in the latter part of 2004 at Fort Leavenworth, Kansas. This command was called the Battle Command Knowledge System, or BCKS.

Knowledge Management (KM) was a new field, and concept, to the Army and BCKS was designated by the Combined Arms Command (CAC) at Fort Leavenworth at the time to be the primary experimental test bed for both implementation and integration of knowledge management with the U.S. Army. CAC is one of the major subordinate commands of the U.S. Army Training and Doctrine Command (TRADOC) which is based at Fort Monroe, Virginia.

From March 2005 to August 2010, when I left BCKS, I helped to pioneer, develop and mature military specific knowledge transfer efforts and methods in the U.S. Army. During this time we found out what works well, and what doesn't, and under what conditions. The chapters of this book cover what I learned during that time that can help you to facilitate *rapid knowledge transfer* within your *own* unit, command or organization. There are a lot of lessons learned here in these chapters, many learned the hard way! Let's begin by discussing the different types of knowledge.

Understanding experiential, informal and formal knowledge

Experiential knowledge as defined in the Wikipedia™ article titled "Experiential knowledge" as "*knowledge gained through experience as opposed to a priori (before experience) knowledge*".

Experiential knowledge by its nature comes from first hand human experience in a variety of situations and environments. The knowledge we are taught in the classroom, while of great value, is largely theoretical until our own or others experience has validated

or modified it under real world conditions. On the battlefield experiential knowledge always has the highest value to the Soldier from a survival and mission success standpoint.

As an example; when a squad leader on the battlefield runs into a new Improvised Explosive Device (IED) he has never seen before it is imperative that we rapidly transfer what the squad leader has learned to every other such leader of the battlefield and those who might deploy to it. A successful transfer of this experiential knowledge makes all other squads who receive this transfer more successful and less likely to have casualties when they run into the same device at a later time.

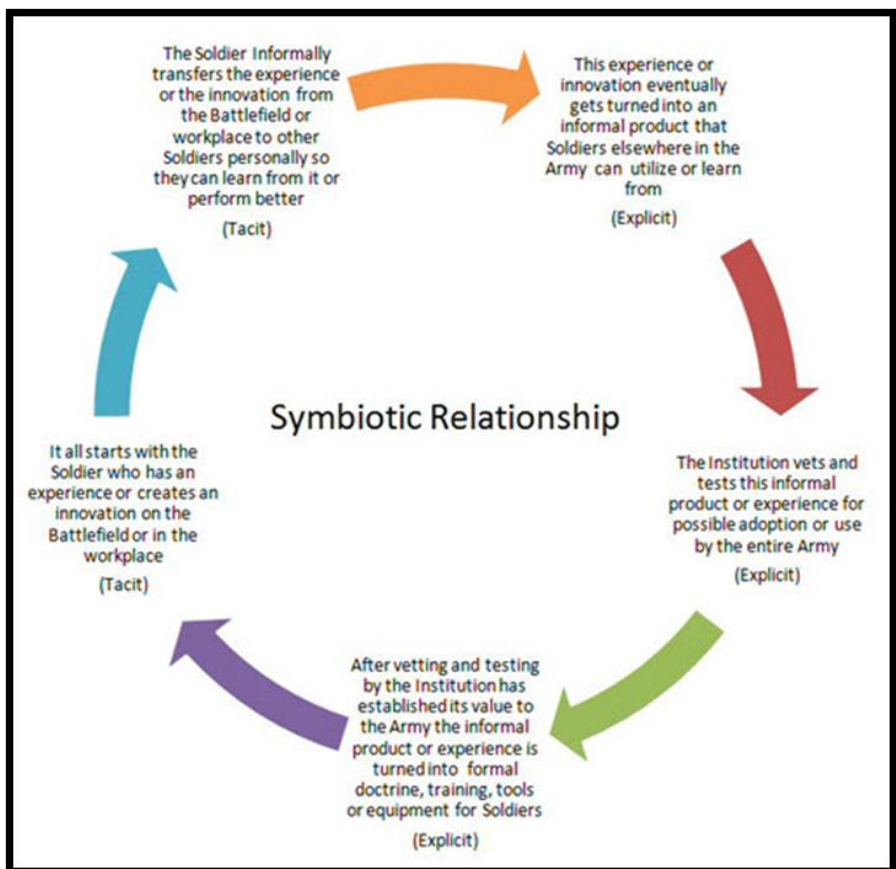
Now we must move onto the next step and ensure that you also understand the difference between informal and formal knowledge, and how the two relate and support each other. This is another conceptual stumbling block for many leaders, staff and Soldiers, although they have been working with both informal and formal knowledge all of their careers but have often not recognized that fact.

Most that I have ran into think that the only knowledge of value is that which is validated, vetted and codified by recognized military institutions such as schools. Such knowledge is called *formal* knowledge. Knowledge transfer on the other hand works primarily with informal knowledge generated directly from military personnel. What is informal knowledge?

- Is knowledge that has not yet been validated or vetted and made “official” in nature.
- Is experiential in nature and often transmitted from person to person in trusted social relationships.
- Often rendered into un-validated and unofficial knowledge or physical products for use by other individuals. Example: Cheat sheet, improvised item of equipment or an Excel calculation worksheet to perform a specific job task.
- Is the coal that feeds the engine of organizational and doctrinal evolution.
- Is the primary source of most new innovations and breakthroughs.

- It is important to recognize that all formal military knowledge and innovations began at one time or another as informal knowledge!

For formal knowledge to evolve, and new innovations to occur, there must be a constant supply of *new* informal knowledge being fed into it. This requirement necessitates that a symbiotic relationship occur. Here is a graphic image designed to help you visualize this relationship:



What we are trying to achieve with knowledge transfer efforts in the military?

The goal of military knowledge transfer is very simple: *Find those that have military experience and knowledge of value and transfer it as rapidly and easily as possible to those who need it.*

If we do this correctly our Soldiers will be much more agile and adaptable on the battlefield than the enemies they face, and as a result much more successful. For us to accomplish this goal we must set up the right environment, conditions and processes for experience and knowledge transfer to occur within our units, commands and organizations.

Military personnel have always practiced knowledge transfer within small units, and among each other, with varying degrees of success in order to enhance both survival and success on the battlefield. Until recently this could only be done on a very local level with few others who perhaps had a mix of different levels of experience or perhaps none at all.

Today we have a clearer understanding of how such experiential knowledge transfers work and the technical capability and know how to allow military personnel to do this across the globe 24x7 on a scale never before imagined or possible. Military personnel can now have access to the experiences of his or her *entire* profession no matter where they are. This is changing the face of the battlefield forever as we know it.

I have found through experience that knowledge is a highly individual commodity having an extremely short shelf life, especially in war time. Our ability to facilitate the rapid transfer of it, while it still has value, to those who can immediately put it to use elsewhere on the battlefield are what military knowledge transfer operations are all about.

Here is what a military staff member, leader or individual can reasonably expect from an effectively implemented knowledge transfer strategy at the unit, organization or institutional level:

- Improved situational awareness through near real time knowledge and experience transfer resulting in better

decisions and selection of more successful courses of action.

- Reduction in email traffic through increased use of online collaborative tools.
- Turning data and information into something that can actually be useful instead of just overwhelming.
- A substantial reduction in the time needed to resolve specific technical or leadership problems and challenges resulting in more agile and adaptive personnel and leaders.
- A substantial shortening of the learning curve for new personnel by providing access to relevant, knowledgeable and experienced online subject matter experts and mentors.
- Innovative or breakthrough ideas and tools resulting from the sharing of experiences and knowledge collectively.
- Transfer of best practices from one individual to another in near real-time.
- A decrease of negative outcomes for first time real world contact experiences.
- A reduction in the cost of mission accomplishment through superior knowledge transfer.
- Fill the knowledge gap between doctrine learned at schools and its practical application in a fast changing environment.
- Generation of “on the fly” knowledge as needed by harnessing the collective minds of the military profession.
- The ability to build enduring professional social and networking links that can be drawn upon to rapidly solve problems as they occur.

Understanding the local nature of knowledge transfer

In a manner similar to that in politics I have come to recognize over time through trial and error that virtually all knowledge transfer concerns are local. For knowledge transfer operations to

be successful and persistent in the U.S. military it must be personalized and targeted specifically toward satisfying Soldier and small unit needs. While large unit headquarters control and direct things, it is the small units and the Soldiers themselves who get things done on the Battlefield on a day-to-day basis. While knowledge transfer can be implemented strategically it must, in the final wash, be executed tactically if it is to be successful.

In the online environment this local effect is even more pronounced as we deal with *individual* Soldiers, not units. In the online environment Soldiers want and expect to deal *directly* with other Soldiers just as they do in the physical world they face every day. Senior leaders tend to talk *units*. Military knowledge transfer must primarily talk *Soldiers*.

Building a Casual Knowledge Sharing Culture – The Good Fight

In a telephone discussion I had one day in mid-2010 with a new Knowledge Management Network (KMNet) Community of Practice member, who is a knowledge manager in his organization, the issue of casual knowledge sharing came up. In comparing notes it turned out that we both had similar experiences with Soldiers, civilians and leaders in this area.

Our experiences were that the essential need for casual, spontaneous and voluntary knowledge sharing is much better understood by the newer generations than the older ones, and that most of our efforts as knowledge managers are spent trying to get senior personnel to become casual knowledge sharers. Translation: The up and coming younger generations “get it” and the older ones, with some notable exceptions, often don’t.

This seems to be a generational issue at work here. Coming from one of the older generations I understand this all too well. In my generation knowledge sharing with people I didn’t know and trust completely was neither encouraged, nor recommended. If you did this you were often seen as foolish or naive.

Coupled with this was also a strong element of “*knowledge is power*”, which often resulted in knowledge hoarding rather than sharing in order to bolster your position and authority. Looking at

this approach from today's perspective I see this thinking and behavior as both counterproductive and rather antiquated. In today's rapidly changing world I don't think we can afford that way of doing business anymore.

I saw this resistance to casual knowledge sharing way too much in my day-to-day dealings with senior level military personnel. How can we expect others to follow what we are trying to do if we don't practice casual knowledge sharing among ourselves as easily as we breathe?

I have to admit that I rather envy the younger generations who are growing up in an environment where they are willing to share anything and everything casually with people they don't know at the drop of a pin. That they are doing this so easily, and rapidly, is changing the world we live in.

Let's face it. What we are trying to do in the military is no less then revolutionary – build a culture of voluntary, spontaneous and casual knowledge sharing across the entire force. Someone quoted to me once that this task may be on par with the Manhattan Project as it reflects a truly revolutionary change in human thinking and behavior.

While I won't go that far, I am beginning to realize that this is going to be an enormous task and undertaking, as anything dealing with trying to change basic human behavior often is. The stakes of what we are attempting are extremely high. If we succeed at building this casual knowledge sharing culture in the U.S. military, and I think we will mainly because of the forward momentum of the newer generations, the U.S. Military will be forever changed and will become unbeatable by any potential enemy no matter what they do, or are equipped with.

One way or another I have no doubt we are going to build this casual knowledge sharing culture in the U.S. military and it will be end up being the "good fight" of this generation!

Applying knowledge transfer in units, organizations or institutions

Knowledge transfer initiatives and operations do not have to be intricate, complex or massive in scope to succeed, although

sometimes that is the perception all too many have. It is important to not lose site of the primary goal which is to facilitate and maximize knowledge and experience transfer between leaders, staff and Soldiers within that unit, organization or institution.

Keeping knowledge transfer strategy as simple as possible is the best method to achieve knowledge transfer success within your unit, organization or institution. Never use a more complex knowledge transfer method or technique to solve a problem when a simpler one will work instead. Too many of my fellow professional colleagues opt for complex and resource intensive knowledge transfer strategies, processes and initiatives and, as a result, often fail.

Many problems often only need simple but creative solutions, as will be mentioned in other chapters of this book. Where possible simple knowledge transfer approaches are best, easier to implement and more likely to be successful. Simple solutions also tend to have little to no cost in the way of funding or resources needed to make them happen and can often be done without a long formal approval process through higher headquarters being needed.

When planning and designing your own unit, organization or institutional knowledge transfer strategy keep in mind that it will have to be tailored to the specific needs of your unit, organization or institution. Although there may be a lot of common elements from one unit to another there will never be a one size fits all approach that will work for everyone.

Any knowledge transfer strategy will have to take into account the following:

- The needs of the leadership of that unit.
- The needs of the staff of that unit.
- The needs of the individuals who are not leaders or staff of that unit.
- The education required to make it all work.
- Resource limitations which define the extent of what you can practically do.

If you have to prioritize who gets the help first then concentrate on small units performing combat missions on the battlefield. If they fail, so often does the headquarters that commands them. In combat a headquarters is often only as successful as its least capable subordinate unit – something to keep in mind.

Whether they are leaders or not, all individuals have a basic requirement for enough knowledge and experience in order to be able to successfully complete an assigned mission, task or function. Highly experienced and seasoned individuals will often not require as much external knowledge or experience to draw on to be successful. The less experienced and seasoned an individual is the more external knowledge and experience they will need to draw on in order to be successful.

The degree of collaborative capability needed for leaders or individuals will depend on how much they need to connect with other humans in or out of their immediate vicinity in order to be able to successfully complete a mission, task or function.

For any approach strategy to be successful it must allow for the individuals to draw on external, to themselves, knowledge and experience on demand, as well as to provide collaborative capabilities and opportunities when needed.

The control issue

Military knowledge transfer initiatives, especially if they look to become successful, always tend to inevitably incur the constant threat of over control by military hierarchical command control structure.

Nowhere is this seen more than with online military communities of practice (CoPs), also known as professional forums. The more successful a CoP is, the more compelled higher commands often feel to control every aspect of it. Such control is often counterproductive to knowledge transfer initiatives such as these and can easily have the exact opposite intended effect, and end up stifling the free flow of knowledge transfer between Soldiers.

Military commands or institutions do have an important role with knowledge transfer initiatives and these are:

- Sponsoring the initiative and providing organizational access and resources where they can.
- Championing the initiative when roadblocks or speed bumps are encountered to growth or operation.
- Nurturing growth of the initiative.
- Shielding the initiative from well-intentioned outside interference which might prevent or diminish the free exchange of informal knowledge and experience between participants.
- Supporting the initiative by ensuring appropriate military and DOD civilians are made aware of it and staff stays engaged in the initiative on a continuing basis.
- Capturing and transfer knowledge, tools, best practices and innovations that are generated by the initiative and putting them into the training, doctrine and operational loops after formal validation/vetting by that command or institution.

Over control of knowledge transfer initiatives such as CoPs by military command and control hierarchy will result in a high probability of causing those initiatives to eventually fail because of the culture clash between the bottoms up nature of knowledge transfer and the top down nature of command control. The promise of knowledge transfer can only be fulfilled by acknowledging that some traditional control must be given up or relaxed within limits in order for us to succeed at this.

The more restrictions placed on the Soldiers ability to freely communicate with other Soldiers, the more likely they will find an uncontrolled venue that is free of such restrictions to communicate, socialize and network with each other such as blogs or YouTube.

The validation issue

Everywhere I go and present or train I get the question: *“who validates Soldier generated informal knowledge to ensure its*

correct?". The answer is very simple: The profession does, and this has almost always been the case either online or in person.

I can almost guarantee that you personally have witnessed this yourself in action many times in the course of your career and never thought of it that way, but it is quite true. An example that comes easily to mind is someone saying something at a command staff meeting that is flat wrong. In such cases corrections come fast and often furious to correct the wrong statement or fact and I am sure you can recollect several such instances of your own that occurred during your own career.

This also happens online with military communities of practice or professional forums but on a much more massive scale. Instead of just a few people to correct you there could potentially be hundreds of Soldiers or more with greater experience than you reading what you post and quickly, sometimes in mere minutes, telling you that you are wrong and providing the correct answer. This happens almost without fail and is well documented at BCKS.

The profession itself does an excellent job of self-policing publically shared knowledge given the opportunity to do so. If knowledge transfer initiatives are to succeed we must learn to trust the profession as we always have before.

Toward a Human Centric Strategy

Although you may be used to talking in terms of units you need to recognize that all knowledge and experience transfer, and collaboration, occurs between discrete human beings – not units. This is true whether the transfer occurs online or face to face. Military units or organizations are after all simply groups of human beings who are brought together to focus on the successful completion of collective missions or tasks. Without human beings the unit ceases to exist as something real and tangible.

On the flip side technology solutions have little value by themselves. It is humans that input information, knowledge and experience into them which gives them any value they may possess. As an example a community of practice or professional forum is nothing without the input of either content or discussions by its human members. Without such content or discussions a

community of practice is an empty piece of software with little or no value to anyone. The same goes for a Wiki or almost any other collaborative software tool. These technological tools play an important *enabling* role in what we do but for knowledge transfer to be successful in the military it must be first, and foremost, human centric.

If not used wisely such over reliance on these technologies for knowledge transfer can, as some academic studies have shown, have an actual negative impact on human to human relationships and communications. Don't believe it? Just think of the consequences that email has wrought on many organizations.

I experienced this myself first hand. After I retired from the Army in 1993 I was an employee of a high tech software development company. I watched as it was slowly destroyed *internally* because people were relying totally on email for all communications, and often as a way to avoid actual human contact. The sad truth is that online technologies don't allow for essential trust building to take place which is a necessary pre-condition for the most rapid and effective forms of knowledge and experience transfer to occur. More on trust building in a later chapter.

Too much focus on the commander and staff

One of the major pitfalls I have seen repeatedly over the years when knowledge transfer initiatives have been created and implemented within organizations is that they tend to focus way too much on the headquarters (HQ) commander or his or her staff, and not enough on the Soldiers themselves.

What are we doing to help the Soldier in combat companies, platoons and squads? Not much from what I have seen and heard over the last five years at BCKS. Knowledge transfer needs to happen at all levels of an organization and not just with the top one or two percent of organizational personnel, yet all I continue to hear about is the staff and commander in most professional discussions on this matter.

I asked a division level combat unit chief knowledge officer (CKO) about this on a tele-conference which I was part of in 2010 and got the answer that knowledge managers, such as herself, are

too few and mostly spend time responding to the commander and his or her staff and keeping them happy. What about the squads and platoons I asked, twice, before I got an answer. The answer was “*they have the use of the provided portals or technology*” and that was the sum total of knowledge transfer initiatives apparently below division headquarters level. I have also seen this same thing first hand in TRADOC Schools as well.

It is important to understand that even the best and most situationally aware command staff in the world can’t overcome poor squad performance at the pointy end of the spear. We used to concentrate most of our efforts on the fighters, and now because of over reliance on technology for knowledge transfer we tend to focus too much on commanders and staffs. When planning your knowledge transfer strategy don’t fall into this trap yourself.

Social media and online knowledge transfer technologies

Coming from a software engineering background, which I obtained after retirement from the military, I was often tasked by BCKS to explore new social media technologies with an eye toward possible integration of them into military knowledge transfer operations. While there are many great knowledge transfer technologies, I found that three of these worked *extremely* well and were very practical for military knowledge transfer operations. These are:

- Communities of Practice.
- Wikis
- Gaming

These three primary knowledge transfer technologies will each be discussed in detail in their own dedicated chapters of this book.

You have probably noticed that blogs and blogging capability is not listed, and there is a reason for this. While blogs can be very useful into gaining insights into the blogger’s thought processes, and reading about the blogger’s experiences and what they have learned, they often fizzle out after a short while.

A good blog requires constant attention and updating on the part of a blogger, or readers quickly lose interest in them and quit coming back to read it. I have personally witnessed several blogs that were started by general officers and quickly became dated because they were no longer being updated by that officer. Blogs are time intensive and as a result not a great knowledge transfer technology unless the blogger is extremely disciplined and makes the time to maintain the blog they started. What is done in a blog can just as easily be done at considerable time savings in a military community of practice instead.

When adopting knowledge transfer technologies we need to be hard headed, very practical and resist adopting the latest item just because it seems cool.

Structured Socialization and Social Learning

What is socialization and social learning?

What is socialization? There are a number of definitions for Socialization found on the Internet. If you feel so inclined you can find them by Googling these keywords; *define socialization*. There are many but to save you time here are four of them:

- The process by which culture is learned; also called enculturation. During socialization individuals internalize a culture's social controls, along with values and norms about right and wrong.
- The process whereby individuals learn to behave willingly in accordance with the prevailing standards of their culture.
- The process by which new members of a social group are integrated in the group.
- Is a term used by sociologists, social psychologists, anthropologists, politicians and educationalists to refer to the process of inheriting norms, customs and ideologies.

Most people give no thought to the conscious processes involved in how we learn what we know and just take it for granted. Most would be surprised that the vast majority of what we learn during our lives comes from socialization and this has been going on since just after you were born. Need convincing? You talk and you walk because you learned this from your parents at a very tender age when they socialized with you. It is also most likely how you learned your moral code which you live by. When you learn from a group of other individuals through interaction with them this is referred to as *social learning*. Only fairly recently has the importance of social learning been recognized in the U.S. military.

The two different forms of socialization

From the military perspective socialization can take two forms; either structured or unstructured. What are the differences between the two?

- **Unstructured socialization**, often referred to as casual socialization, is what happens when people meet casually without any pre-defined goals to be achieved and no imposed structure is either needed or wanted. Discussions and conversations tend toward the spontaneous and may cover a wide range of issues of interest to the people involved. An example might be when people meet in a café over coffee to discuss matters of interest to them such as personal or work related issues.
- **Structured socialization** on the other hand is some form of social gathering which has one or more pre-defined goals to be accomplished and a structure imposed to ensure that those goals are achieved. Discussions and conversations during these events are often, but not always, either guided or facilitated in some way.

Socialization is also where trust building occurs and personal networking is accomplished. It is through socialization, in one form or another, that we get to know people, take their individual measure and then add them to our circle of trusted contacts, or not. Lack of trust is often a major impediment to rapid military knowledge and experience transfer.

A lesson learned from the Australian Army

In 2008 I attended the Army Operational Knowledge Management (AOKM) conference at Fort Leavenworth which was hosted by the Battle Command Knowledge System (BCKS). One of the sessions I attended was given by LTC Liam Hale of the Australian Army. He was talking about how knowledge management (KM) is done in the Australian Army.

Some of the points he made during his excellent presentation came as an epiphany to me. It is amazing sometimes how we often neglect obvious but simple methods of achieving effective military knowledge transfer in favor of much more complex and harder to succeed with methods within our organizations. The Australian Army's simple, elegant, but decidedly low tech solution to effective knowledge transfer at the tactical level involved structured socialization.

What they are doing in the Australian Army according to LTC Hale is ensuring that when in garrison the leadership of units periodically conduct informal social events at the base club where they discuss work but in a relaxed social environment over both beer and pool. They also ensure that during this time the *Chatham House Rule* is in affect to encourage free flow of knowledge and experience.

For those not familiar with the Chatham House Rule its definition is very simple. *When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.* This definition is courtesy of Wikipedia. The purpose behind this simple rule is to protect sources of knowledge and allow lowering of normal barriers to free knowledge transfer during these socialization events.

To put this in perspective back in the early 1980's I was a combat engineer squad leader. While I knew and was able to talk with two other squad leaders in my own platoon there was not much opportunity to socialize and "talk shop" with squad leaders from other platoons in my company, nor was this encouraged. Being able to draw on the knowledge and experiences of eight squad leaders instead of just two would have been very helpful to me in dealing with the learning curve of being a sapper squad leader but our armored engineer company simply did not do organized work related socialization in garrison for the most part, nor was the important role of social learning acknowledged as it is today.

I think the Australian Army is onto something big here that we may have missed in our attempts to find technological solutions

to every knowledge management and knowledge transfer problem. Why not while in garrison build in work related socialization opportunities periodically under the Chatham House Rule as they do? During such events we need to make sure there are ways that get people to talk to other people *outside* their normal circles. Using the engineer squad leader example I mentioned earlier we would want to find a way for squad leaders from different platoons to mingle and talk with each other during these events, instead of just squad leaders from their own platoon. New knowledge or experience is more likely to be acquired from those who are new to you than those individuals you already closely associate with on a daily basis.

Once people get to know each other, and a level of trust is established, knowledge transfer happens almost automatically between those involved without much prompting from anyone else. You know this to be true since you have most likely been doing this for almost your entire life but perhaps without recognizing it for what it was. To ensure maximum combat cohesion and performance leaders from all levels of an organization must be allowed the time to get to know one another and build the level of trust needed for effective knowledge transfer to occur. The best time to do this is in garrison before you deploy to the battlefield, not after.

Leaders must look for opportunities where structured socialization and social learning can occur within units as a way of encouraging effective knowledge transfer between the individuals of those units. As an example, when it comes to training think group problems or tasks instead of problems to be solved by individuals alone. Soldiers working together to solve a problem often informally share knowledge and experience with each other as part of the process. This is applied social learning in action.

The Australian Army has recognized that it is hard for effective socialization to occur in work surroundings which is why they did this at their base club. Like the Australian Army I believe that structured opportunities for socialization must occur outside the normal day-to-day work place in order to allow folks to get away from the press of work, telephone calls, email and Soldiers interrupting constantly wanting something from them.

A few such suggested structured socialization opportunities for tactical level units might be:

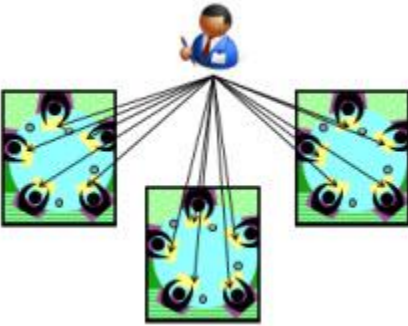
- Platoon leaders of a Company or Battalion meet once a month at the base club to discuss one or more pre-defined issues .
- Platoon SGTs of a Company or Battalion meet once a month at the base club.
- Squad leaders of a Company or Battalion meet once a month at the base club.
- Logistics or operations staff officers of the entire Brigade meet once a month at the base club

Brown bag luncheon as one example of a structured socialization technique

One structured socialization technique we will explore in detail in this chapter is the brown bag luncheon. From a knowledge transfer perspective a brown bag luncheon is a structured social gathering during an organizational lunch time period which is used specifically for the purpose of transferring knowledge, building trust, establishing social or networking links, social learning, problem solving or brain storming. What are the advantages of a brown bag luncheon?

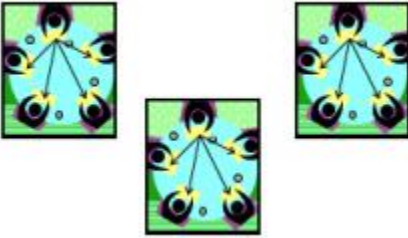
- It allows people to socialize and get to know each other in a relaxed situation where they might not otherwise do so.
- It allows for trust building to occur.
- It allows for rapid real time exchange of knowledge and experience.
- It allows for building of enduring social and networking connections.
- It allows for social learning to occur.
- It's fun!

There are four types of brown bag luncheons. These are:



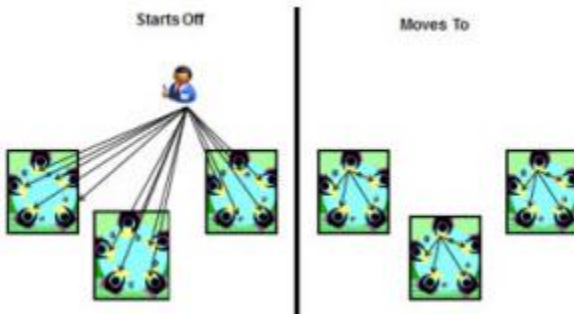
Seminar type: The most widely used of the types and most traditional. A guest speaker talks for a specified period of time on a specific subject with the intent of passing his/her knowledge and experience onto everyone in the room. After the speaker is finished people at tables are allowed to socialize

and discuss what was just presented. Useful tip: Ensure the speaker does not use up more than 60% of the available time to allow for socialization and discussion of what was presented at each of the tables.



Small Group type: Each person at the table is asked to answer at least one pre-determined question. As an example this could be as simple as what is the biggest problem you worked on during the last week or month? After

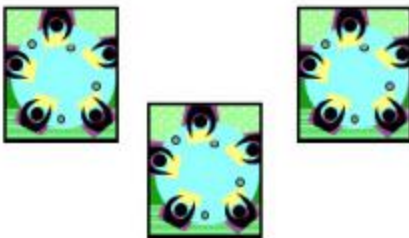
the person answers the questions the other members of the table can comment, ask for further elaboration or discuss what was said. This process is repeated until all personnel at the table have answered the question. The small group directs itself although a facilitator can be used to ensure time constraints and goals are adhered too. Maximum transfer of knowledge and experience will most likely occur at this type of luncheon. Useful tips: Limit the time to for each person to answer the question to just a few minutes to ensure everyone at the table has a chance to answer the question and for discussion to occur. Any remaining time should be used for socialization among the group at each table.



Combination type:

Contains elements of both seminar and small group types. Starts off as a seminar type but the speaker is very limited on presentation time. After the

speaker is finished the rest of the luncheon moves into the small group type format. Each person at the table is asked to answer at least one pre-determined question revolving around the speaker's presentation. After the person answers the questions the other members of the table can comment, ask for further elaboration or discuss what was said. This process is repeated until all personnel at the table have answered the question. The small group directs itself although a facilitator can be used to ensure time constraints are adhered to. Very useful for organizational problem solving and brain storming! Useful tips: Limit the speaker time to a maximum of 25% of the available time so that the small groups have adequate time available to them to address what has been presented. Any remaining time after the small groups have finished should be used for socialization among the group at each table. If used for problem solving ensure results are recorded at each table and handed in prior to departure from the luncheon.



Social type: The primary purpose of the social type is for each of the persons at the small group table to get to know one another and what each does. Used mainly to build trust and establish social and networking links between the individuals

involved. Useful tips: An ice breaker is often needed in order to get people to start talking in this type of luncheon. Consider having each person at the table start off by introducing themselves and talking about what they do.

General Tips for making brown bag luncheons successful

- If available use round tables with a maximum seating capacity of no more than 10. Six or less is optimal. Round tables are often perceived by those who sit at them as everyone being equal. Also each individual at the table can easily see all other members at the table. This maximizes the feeling of inclusion.
- Consider using the Chatham House rule during the luncheon. This will ensure people feel free to speak. If you utilize this rule be sure to announce it at the beginning of the luncheon!
- Keep the luncheon as informal and fun as possible.
- Do not hold these luncheons more than once a month, at most, or people will grow quickly tired of them. Less is better so people continue to enjoy them!
- Arrange for the luncheon to be held outside of the normal work place environment to minimize possible interruptions and put people at ease. When doing this allow extra time for the luncheon for travel to and from the chosen location.

Avoiding the clique effect in a brown bag luncheon

It is human nature for people to tend to only sit together with people that they already know. This can be referred to as the “*Clique Effect*”. When the clique effect occurs knowledge transfer is impeded or minimized since the individuals already know each other and are often unable to transfer anything new. Also no new trust building, social or networking links can be established. To counter the clique effect, number the tables at the luncheon event and then have participants draw a number when they enter the room. The number drawn reflects the table they are to sit at. This simple randomization technique ensures people meet and socialize with at least a few people they do not know. This method breaks up the clique effect that is often a barrier to knowledge transfer and learning within organizations.

On the Battlefield and in the Classroom

On the Battlefield

Technology and social media are rapidly changing how we acquire and transfer knowledge and experienced on the battlefield and the speed in which we do it. It wasn't all that long ago that the opportunities for a Soldier to gain new experience and knowledge, or transfer it to others, were limited strictly to the local operational area where the Soldier's unit was deployed. Such limited opportunities often had negative repercussions on long term Soldier and unit survival and performance.

Contrast that with what is being experienced by Soldiers in both Iraq and Afghanistan as of 2010. Soldiers now have a variety of technologies available that allows them to share knowledge and experience with almost any other Soldier, anywhere in the world, 24x7. Three such capabilities are:

- The Internet. Almost all U.S. military personnel who are based at the semi-permanent Forward Operating Bases (FOBs) have access after duty hours to Internet Cafes that have been setup with computer systems and commercial Internet access.
- Combat Soldiers also have devices such as Tactical Ground Reporting (TIGR). TIGR is a multimedia reporting system for soldiers at the patrol level which allows users to collect and share information to improve situational awareness and to facilitate collaboration and information analysis.
- Small portable digital video recorders. Crews, squads or platoons that have these increasingly ubiquitous devices available to them when conducting a mission on the battlefield have a tremendous capability for recording what they see and experience which can then be rapidly shared with others.

Of the three, the technology that has had the widest general impact from 2001 to 2010 on the battlefield has been the Internet. The Internet has allowed any Soldier to communicate with anyone, anytime, anywhere. For those who haven't seen this in action it can be hard to grasp the profound effect this has had on modern warfare. What does such capability allow from a knowledge transfer perspective? Here is what I have personally witnessed:

- Soldiers can ask questions and receive help in almost real time from experts and fellow professionals far from the battlefield. This capability is often referred to as "*reach back*". Such capability is a "force multiplier" on the battlefield as it gives the Soldier access to an almost infinite supply of knowledge and expertise when they need it.
- Allow Soldiers and units who are soon to be deployed to the battlefield to communicate directly with Soldiers and units already there to help train and prepare for what they will have to experience. This capability is often referred to as "*reach forward*".
- Allows newly deployed Soldiers to maintain contact with the Soldiers they have recently replaced. This capability has helped with the age old problem of continuity of operations. When a unit that has been deployed to the theater of war for some time is relieved by a unit from the United States there is often a break in continuity until such time as the new unit gets up to speed. Having members of the relieved unit still available to offer advice as needed, or called upon, can make a big difference in shortening the length of the learning curve for the newly deployed unit.
- Allows Soldiers to continue to participate in military communities of practice to the benefit of all. Having those in the combat theater sharing what they have learned or getting help on an urgent issue in such online sites is simply amazing to watch in action!
- Allows Soldiers to share video they have personally recorded on the battlefield with other Soldiers.

- Allows Soldiers and leaders at all levels to Blog about their combat experiences.
- Democratizes knowledge transfer by allowing such transfer to occur not just vertically, but also horizontally.

Soldiers who have Internet access available to them on the battlefield should be encouraged by their leaders to maximize its use for two way knowledge and experience transfer purposes wherever and whenever possible.

Tactical debriefings as a knowledge transfer technique

Every time a squad, section or crew goes on a mission, or performs a patrol, there is a new opportunity for the personnel involved to pick up new knowledge and experience. It is up to leadership to put into place processes to ensure that what is learned is disseminated to everyone else who needs to know. When designing an effective unit or organization knowledge transfer strategy for the battlefield the simple goal should be: *what one knows, all know*.

How can you implement this goal? One of the best ways is to ensure that your unit or organization has an extremely robust debriefing process that comes immediately into play after each and every patrol, mission or any other significant incident or action which has occurred. Once the debriefing process is completed the knowledge and experience is rapidly transferred to the rest of the unit or organization through manual or automated means. Some examples of how this can be done are:

- Make what has been learned available in downloadable digital file formats that can be placed on portable personal electronic devices such as the iPod Touch. A large number of Soldiers often have these mobile devices so take advantage of them! For combat actions at the tactical level, turn the debriefs into VBS2 scenarios, if possible. These can be used for AARs purposes, patrol briefings and rehearsals.

- Do as the Israeli Army does and produce a one page printed daily flyer of the latest or hottest debrief tips and distribute them each day. Be sure to post them, at every unit tent/facility and in every field toilet. No, I am not kidding here about the toilets. The Israelis really do post them in the toilets and this was briefed by an Israel Army Knowledge Management Officer at one of the Army Operational Knowledge Management (AOKM) conferences which I attended at Fort Leavenworth, Kansas and which were sponsored by the Battle Command Knowledge System (BCKS). What the Israeli's did makes great sense if you think about it. Every Soldier visits a toilet at least once every day and when doing their business will often tend to read what is posted or is available in the form of reading material in the toilet. This simple low tech knowledge transfer method worked highly effectively for the Israeli Army. Also be sure to provide copies of this flyer on a daily basis to adjacent units and higher HQ.
- If you have a TIGR device, or something similar available, be sure that anything significant in the way of new knowledge or experience that comes out in the debriefing gets posted on it. Soldiers being debriefed just after a patrol or other combat action are tired and won't always do this on their own so the de-briefing process serves as a technique to extract what has been learned and experienced and ensuring it gets posted so that others know about it.

Useful tips:

- The debriefing process should also periodically debrief the staff sections and key leaders such as company commanders, XO's, CSMs and 1SGs as well. Staffs and key leaders are often missed during the debriefing process. These personnel have much knowledge and lessons learned to share with others and should be debriefed as well.

- Don't just focus on knowledge and experience derived from a successful patrol, mission or significant tactical event. Failure, which sometimes happens on the battlefield, often teaches more than success does. An example of this would be the ambush of the 507th Maintenance Company which occurred when a convoy of vehicles from the 507th got lost and entered the Iraqi held town of Nasiriyah on March 23, 2003. Much was learned from this event which was later put to good use to better train follow-on combat support units for war.
- When possible such de-briefings should be captured either on digital audio or digital video and these can serve later as valuable lessons learned training products back at Army schools and perhaps on military communities of practice, if not classified. These audio and visual recordings can also be used by the unit to train new personnel and replacements when the unit returns to its normal garrison environment after deployment has been completed.
- Serious consideration should be given to issuing a portable digital video recorder to every crew, squad and platoon that goes on a battlefield mission. These would then be turned back in during the debriefing process. The video is then viewed, analyzed, edited if need be, and then if found of value, shared both horizontally and vertically with anyone who might benefit from it. Such videos can also be used at military schools for training purposes.

In the Classroom

On the battlefield knowledge transfer doesn't often meet much resistance because it is seen as enhancing both survival and performance. This is not true in the institutional classroom however. Based on my five years of experience from 2005-2010 with the U.S. Army as a senior knowledge manager I would have to say that is it the formal military training institutions that have often proven most resistant toward integration of knowledge

transfer and social learning techniques into the classroom. Why is this? *Tradition* would be the one word short answer to this question.

With very few exceptions militaries for generations have relied on the *instructor on the platform* training model coupled with either hands-on or rote memorization to train Soldiers. In this training model an experienced NCO or officer would deliver instruction from a formal school approved program of instruction (POI) to a group of Soldiers and then have them practice it till they got it right. Until fairly recently this model has served militaries well chiefly because it works and there wasn't anything better available. This training model is so ingrained in the military psyche that it has become a tradition. After all, why change something that is perceived by many as working well?

Yes it works, but this training method has its flaws and the young people of today are increasingly rebelling against these old training methods, and for good reason. Those of us who have had to deliver training in this manner to Soldiers, and I have done my share, have long known of its shortfalls in the classroom such as:

- The POI the instructor was working from was obsolete and had not been updated in a long time. The POI review and update process is a complex and time consuming formal bureaucratic process which means that a POI is often out of synch with real world knowledge and experience that has obsoleted some or all of what is being taught in that POI
- POI exercises and tests did not reflect real world reality or credibility and are largely artificial and sterile in nature.
- Everything centers on the instructor with students having little say about what they learned or felt they needed.
- Students have little capability to learn from the existing knowledge or experience of other students.
- Often boring to the extreme because such training offers little in the way of student interaction where students could assist and learn from each other. This

wasn't so bad with hands-on oriented training but could put you to sleep, and sometimes did, with rote memorization or death by PowerPoint style instruction.

In 2006 the Army made a major change to how it does business called the Army Force Generation model, or ARFORGEN for short. One of the major parts of that model had many military personnel returning to schools for their periodic formal courses *after* returning from deployments overseas. While this change was made primarily to allow units to ready for potential deployment, and build cohesion without distractions or loss of personnel, it is proving to have far reaching implications not yet recognized or exploited by many senior leaders, especially those in charge of formal school training.

Prior to ARFORGEN students would go to School courses at any point in their career, to include before or after deployments. Now thanks to ARFORGEN most Soldiers will attend schools only after a deployment cycle has been completed. What does this mean from a knowledge and experience transfer perspective? For the first time the vast bulk of NCOs and Officers returning to schools have the latest cutting edge battlefield knowledge and experience, often far eclipsing that possessed by the instructors at the School or reflected in the approved POI.

Exploiting this knowledge and experience windfall given to us by ARFORGEN requires the use of social learning and instructors acting more as learning facilitators and guides than the traditional instructor on the platform approach. How can we do this? Here are some ways:

- Instead of traditional sterile exercises design group oriented exercises and class projects that allow the students to work together to convert what they have learned and experienced on the battlefield into codified lessons learned documents or guides that others in their profession or function can use. Students love these kind of social learning projects or exercises because they maximize interaction and deliver something real and tangible that has value to their peers and can be used in

the real world, instead of discarded at the end of the course, which is often the case today.

- Have the students interview each other on digital audio or digital video with the intent of capturing battlefield knowledge and experience. Post the best of these recorded interviews on the military communities of practice that serves that profession or function for others to learn from.
- Wherever possible abandon the formal POI update process which often has people with little recent field experience trying to determine in a vacuum what is most relevant and should be taught. The current process simply takes too long and is often out of touch with real world reality. In its place have the students for that course evaluate the POI at the end of the course and recommend revisions which are then incorporated and approved by the course manager for use in the next scheduled iteration of the course. This way you are never more than one class away from the cutting edge of battlefield knowledge and experience. The logic here is that those coming from the field often know best what needs to be trained since they have had to put it into action on a daily basis and not someone who hasn't had to function in the field for years.

Now I am going to tell you about a real world social learning classroom project example that was successfully conducted at the U.S. Army Quartermaster School at Fort Lee, Virginia in 2006 that clearly illustrates what I am talking about above.

The Survival Guide Project

In 2005 I authored a knowledge and experience transfer document for use by others called *The Survival Guide for the First Time Unit Supply NCO*. Before I go further let's first define what a survival guide is so we have a common frame of reference.

A Survival Guide is an informal peer generated publication designed to provide knowledge of an experiential nature to Sol-

diers and designed to get them through the first 90-180 days of a specific job function new to them by shortening the learning curve, minimizing negative experiences and outcomes, and increasing the number of positive results. This guide is not designed to replace, ARs, FM's or TM's in anyway but simply to provide complementary knowledge from those who have previously performed the same job successfully themselves. What is contained in these guides represents the kind of knowledge and experience a senior mentor or peer might impart to you over coffee but much more detailed and structured. The primary goal of the guide is to get the individual "over the hump" and increase the odds of both job and career success.

I wrote this guide for the first time unit supply NCO and it was based on my personal knowledge and experience at company, battalion and brigade supply levels as a successful supply and logistics NCO in the Army from 1984 to 1993. When the guide was completed it was posted onto the U.S. Army's Logistics Network (LogNet), now called SustainNet, online military community of practice which served military quartermaster, transportation and ordnance professionals. From day one this guide was a major success and is still popular and in use as of the time I am writing this book (Fall 2010), although it now resides on the Army's mil-Wiki where everyone can update it and keep it current.

In August 2006 while visiting Fort Lee, Virginia I took a senior warrant officer friend of mine to dinner at one of the local restaurants. This warrant officer was at the time a senior instructor at a warrant officer advanced course (WOAC) at the U.S. Army Quartermaster School located at Fort Lee. During that dinner I discussed with him the concept of survival guides and suggested that perhaps he might want to take this on as a class training project for his warrant officer advanced course students and author some additional ones. He told me he would think about it and get back to me later. Sometime later, after ensuring there would be no objections from his superiors to doing such as project, he undertook this pilot project with the goal of having the students in the class collectively, under his daily instructor leadership, author the following three survival guides:

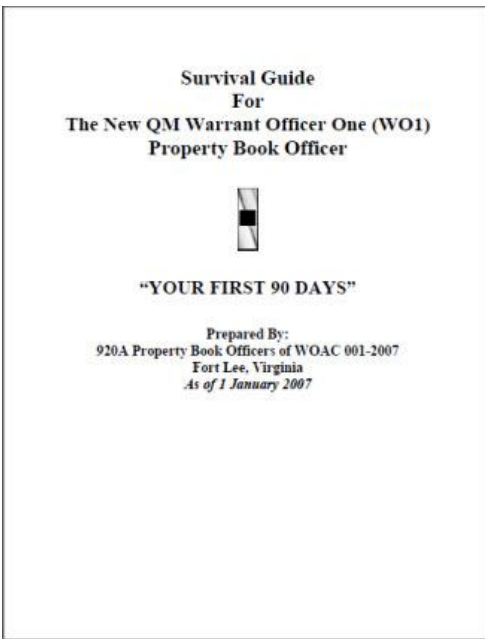
- Survival Guide for the New QM WO1 Supply Systems Technician." Your First 90 Days"
- Survival Guide for the New QM WO1 Property Book Officer." Your First 90 Days"
- Survival Guide for the New QM WO1 Command Food Advisor. "Your First 90 Days"

Those who attend advanced profession related NCO, WO and Officer Courses make excellent choices for authoring survival guides as they have performed the jobs they are writing about at least once in their careers already. Under the ARFORGEN model they are also often just coming off of deployment to the course so they possess the latest cutting edge battlefield or field experience which is precisely what is needed in such guides. For these guides to be completed in a professional manner, and meet established goals, a primary instructor at that course must provide leadership and be intimately involved from day one of the survival guide class training project. The primary instructor of the class must do the following:

- Direct and manage the project.
- Edit, and coach all aspects of the project from start to finish.
- Manage egos, personalities and data integrity.
- Guide format, briefing material, rehearsals, and so forth.
- Resist outside class pressures and suggestions from well-meaning individuals that might change the direction of the project. For the class to benefit from this it must be a 100% in house class project as much as possible.
- Gently force, and occasionally aggressively force, the guides to become a reality.

By doing this at one of the few times we have such concentrated amounts of highly focused experience in one place we are converting critical battlefield tacit knowledge into explicit knowledge products which Soldiers throughout the Army can benefit from in quick order.

One of the side benefits we found of using social learning in this classroom project is that when one student discussed what needed to be part of the guide it would often trigger additional contributions of knowledge and experience from other students who might have forgotten something they had previously learned or experienced themselves. This thought “crystallization” process occurred often during the project and is a major benefit of social interaction in the classroom. Knowledge and experience transfer between students of the class is also happening at the same time as well.



What was done here during this project benefited everyone involved at no additional cost to the Army beyond that already being expended to have the students attend the course and the instructors and facilities to teach them. There was also no change made to the existing and approved POI that the course was being taught from. I would submit that this project could be every bit as successful for any military job or function it is applied too, and not just logistics ones.

The large and almost immediate return on investment (ROI) that comes from doing survival guides is derived from tremendously shortened learning curves and minimized negative outcomes for those personnel who use these guides and the units they are doing the job for. By increasing the odds of early job success for a new individual, we minimize the frustrations which come from negative job success, which often leads to the individual leaving the military earlier than desired due to negative job satisfaction. Such loss, or turn over, of these individuals represents an extremely large amount of dollar loss to the Army each year.

The three survival guides were completed by the WOAC class and put into final form on the week of December 15th, 2006 and uploaded to the LOGNet community of practice on December 17th, 2006 where they became instant hits with the membership and are still there today and every bit as popular.

Since this project was completed new online technologies have become available to the Army. If implemented today I would recommend that such guides be authored on a military Wiki such as the U.S. Army's enterprise Wiki, called milWiki, where everyone in the Army can help to constantly evolve, refine and keep them relevant.

Once a class completes the initial survival guide each successive class should review, update and add to the guides to ensure they have the latest "from the field" experiences and knowledge in them. Doing this means that we are truly only one class away from the cutting edge in the field!

I highly recommend that all formal military school courses initiate and maintain Survival Guides similar to those done in this project for the functions or job covered by the course class. Doing such guides is a win-win for all involved and will generate a huge return on investment by the Army for that training course at little or no additional cost in the way of resources. This is successful knowledge transfer and social learning in the classroom in action.

Summary

Rapid knowledge transfer equates to better survival and mission success on the battlefield. It is up to leaders to ensure that this happens within their units in a disciplined and structured manner. At the institutional level military schools must incorporate knowledge transfer and social learning in the classroom and curriculum wherever and whenever possible, or risk being considered obsolete and no longer relevant to the field forces.

Impediments to Military Knowledge Transfer

In this chapter I will discuss six major impediments to military knowledge transfer which I have observed or ran into first hand. I will identify the impediment, explain why it exists and give you suggestions for how to overcome it.

An impediment is defined here as anything that slows down, or stops entirely, the transfer of knowledge or experience from one Soldier to others. Before attempting to implement any knowledge transfer initiatives in your organization you should first check to see if any of these impediments exists, and then take steps to resolve them. Only after that task has been accomplished should you move to the implementation stage for your initiative.

Impediment #1 - What's in it for me? (WIIFM)

In my personal experience from 2005-2010 with the U.S. Army as a senior knowledge manager and community of practice facilitator the following very general rule of thumb applies for every ten Soldiers without distinction of grade:

- One Soldier (10%) will readily and voluntarily share what he or she knows with others without either being prompted or needing some type of incentive in order to do so. Soldiers in this category are knowledge philanthropists.
- Two Soldiers (20%) will share in response to a prompt of some type, such as a question.
- Six (60%) will share if they are prompted and there is some type of incentive to do so. This category must have the “*what's in it for me*” (WIIFM) factor satisfied
- One Soldier (10%) will not be willing to share unless forced to do so. If they are forced they will contribute the minimum required and the quality of what they share will be low. Soldiers in this category are knowledge hoarders who generally will not share what they learn or ex-

perience with others because to them “*knowledge is power*”. Looking at this from today’s perspective I see knowledge hoarder behavior as both counterproductive and rather antiquated.

As you can see above 60% of Soldiers will generally need to have some type of WIIFM factor satisfied before they will transfer what they have learned and experienced to others. To make this task even more difficult there is no one size fits all for WIIFM. It is different for each and every individual.

Even many of our military knowledge managers exhibit these behaviors as well, which is a situation ripe with irony, if there was ever was one. Need proof of this?

On a daily basis well less than one percent of our Army knowledge management force freely and voluntarily shares what they have learned and experienced in the field with other Army knowledge managers on the official U.S. Army Knowledge Management Network (KMNet) community of practice and the excuses are many and varied.

When dealing with human behavior it is generally true that self-interest tends to rule all. It is this self-interest that WIIFM is derived from. When working with military knowledge transfer this WIIFM factor will be the brick wall you often run into first and it can be hard to get around sometimes.

Excuses from Soldiers to avoid knowledge or experience sharing can take many forms. Here are some of the most common ones I have heard:

- *I don’t have the time, or I am too busy to help others.*
This is the number one excuse I have heard time and again, and in some cases it is a very valid one. It is hard to help others when you are up to your tail in alligators yourself, and I have sometimes found myself in this position as well. Unfortunately however many use this excuse simply as a convenient smoke screen and I am sure you have seen this yourself at one time or another. Soldiers who give this excuse will often make the time if it can be demonstrated to them that the payback more

than outweighs the time and effort expended on their part.

- *I have nothing to share of value.* The second most popular excuse. It is surprising how many say this and don't realize that they do indeed have knowledge or experience worth sharing. Even failures are worth sharing in that such experiences may prevent someone else from failing in that same task or condition. Almost every Soldier with at least one year of service has something of value to share with their peers.
- *I had to learn the hard way, so can they.* A knowledge hoarder excuse. A person who gives this excuse is pure poison to a military organization.
- *If they want help they need to come to me.* Another knowledge hoarder excuse. Such individuals are seeking to have their power or position externally validated by forcing others to come to them for knowledge or experience.

Resolving WIIFM at the individual level is probably impractical. There are just too many Soldiers in the average unit to allow a one-on-one strategy to work in a typical working day. While it is true that WIIFM is unique to each individual it does however tend to fall into broad categories which means that there are some general strategies and steps we can take to overcome it at the large group level. In no particular order these are:

- **Rate:** Rate knowledge transfer in annual efficiency reports. Suggested rating criteria might be along the following lines: "*Does this individual casually, readily and voluntarily share what he/she has learned and experienced with others?*". It is often a true maximum that people will do what the boss evaluates. Before you use this rating criteria ensure your Soldiers understand well in advance what it is in the way of positive behavior that is being sought and what is considered negative behavior in this area.

- **Reward:** Publically reward casual and voluntary knowledge and experience sharing when it is observed. The more tangible the reward the more Soldiers will see voluntary knowledge transfer as a behavior worth emulating.
- **Socialize:** Embed social learning and collaboration as a lifelong successful training and learning strategy. The more such behavior is seen as a norm the more it will become common.
- **Professionalize.** Encourage right from the beginning of a person's career the use of knowledge sharing and collaborative communities of practice that focus on that person's professional career field.
- **Educate:** Soldiers need to know what is that you want and expect them to share with others.
- **Counsel.** Personnel who show an unwillingness to share what they have learned or experienced with others should be counseled to try to correct this behavior.
- **Punish.** Do not promote those that show a repeated tendency toward knowledge hoarding or display a lack of willingness to casually and voluntarily share what they have learned and experienced with others. Such behavior has negative repercussions on the military and should be punished just as any other negative behavior is. This step should only come after counseling to correct this behavior has been attempted at least once.

Impediment #2 - Military security

Unlike the first impediment which tends to be individual in nature this specific impediment is an institutionally inflicted one. Of all the knowledge transfer impediments I have ran into in my years working in military knowledge transfer this one is absolutely without a doubt the most pervasive and aggravating of them all and can be very difficult to work around.

The goal of military security is to limit what the enemy knows regarding friendly activities, plans, information, technology

and any other thing that would be detrimental to the friendly side. Unfortunately in our attempts to achieve perfect security we often slow down, or stop altogether, military knowledge transfer opportunities which can have major negative impacts on the battlefield and friendly force performance.

Most military security policies were written generations ago and are now largely outmoded by today's global information grid and data transfer technology which allows for extremely fast transfer of information, knowledge and experience anywhere in the world in almost real-time.

In my experience most attempts to impose tighter military security often have no other effect other than to cause headaches, and make more work for those trying to get the job done, with little real impact on enemy operations against us. The unpleasant reality is that it only takes one individual who is a trusted insider, or working for the enemy in some capacity, to bypass even the most stringent of military security measures.

Many Soldiers I have talked with are under the belief that the military security system has largely become punitive in nature, and I am not sure I disagree with them based on my own personal experiences. Instead of only punishing the soldiers who have transgressed the system often tends to punish everyone.

To make matters worse the current zero defects climate in the military often results in over classification for no other reason than to avoid potential risk and blame for the classifier should something get into enemy hands that might be of value to them. I have witnessed over classification first hand on many occasions during my long years of working for the military.

Declassification of existing classified material only rarely occurs and often takes more effort than it did to classify it. Why? The answer lies in human nature. If it takes more work to declassify the document why do it? In addition few want to take the risk of declassifying something that was classified by another individual. Doing so just opens you up to potential blame should it be later determined that the document should not have been declassified in the first place. The end result of this is that in actuality very few classified documents are ever declassified.

Case in point. In the summer of 2010 over 390,000 secret U.S. military War documents were leaked by a trusted military insider to a public website called WikiLeaks. Despite dire predictions to the contrary by the Department of Defense the damage resulting from this massive leak of classified military documents was fairly negligible. Why? Most of what was released was freely available and known on the global information grid already. This begs the question of why these files were even classified to begin with or hadn't been declassified earlier when they no longer contained information of any real value to the enemy.

Most soldiers do not have easy access to classified computer systems. When military knowledge or experience is classified it immediately ensures that it will not be easily or readily transferable among soldiers. By hampering easy and rapid knowledge transfer on and off the battlefield we put our soldiers at increased risk. To allow Soldiers to easily transfer knowledge on and off the battlefield classification of information and knowledge should only be done when it is absolutely essential that it must be done.

How can we fix this? There is no easy fix for this impediment as it is institutional in nature and comes from a long policy tradition. Nothing short of a complete overhaul of how we look at military security is needed. Here are some suggestions:

- Accept that at some point in the future the enemy will obtain and know the contents of almost any classified document that you possess. Given today's technology it's not a matter of if, but a matter of when.
- Require justification and commander approval in order to classify a document. Essentially make them prove that it really should be classified and they aren't just playing it safe.
- Require every classified document to have a sunset date on it by which the document automatically becomes declassified. Those few documents that are required to remain classified forever should require extensive justification and approval in order not to be able to have a sunset date. Sunset dates should be kept

as short as possible and based on a date when the document is determined to have no real value to the enemy anymore.

Al Qaeda, due to necessity, uses the commercial Internet for almost all of their knowledge and experience transfer activities, often completely in the open, since they have little or no organic secure communications technology of their own.

The security model they use is a simple one. Sometimes the best way to hide something is in plain sight. The sheer quantity of new content that comes onto the global information grid on a daily basis is almost mind-boggling. Trying to find one key item among so much new daily content is very similar to the old adage of finding a needle in an extremely massive haystack.

The global information grid contains at any one time literally many billions of web pages and documents. Assuming you are able to find something of theirs today you must still translate and analyze it and these activities often take considerable time. Al Qaeda accepts that you might find something they have posted but by the time you do so it will no longer have any real actionable military intelligence value as it's no longer current.

I have coined a term for our enemy's security model called the *velocity of flow defense*. Assumptions for this model are:

- There will never be enough trained intelligence analysts to keep up with the daily creation and flow of information and knowledge on the global information grid in real time.
- Separating fact from fiction is a difficult and time consuming process. The enemy document you are looking at today may just be disinformation and it will take extensive checking and analysis on your part to prove otherwise .
- Almost everything will be known eventually, but by the time the enemy locates, translates, verifies, cross checks and fits it into the bigger picture it will already most likely be overtaken by real time events. Knowledge

that has value to the enemy often has a very short shelf life indeed.

- Having intelligence does not equate to its being either actionable or even useful today in most cases. Example: I could give you plans to the latest U.S.A.F. jet fighter engine today but in reality it would take you years, if ever, to be able to produce it due to the level of sophisticated manufacturing technology and skills needed, and most likely by the time you accomplished it the engine would be obsolete anyway.
- Only modest changes are needed to render a document of little value to an enemy. Example: By not using real names, locations or coordinates the document often has little real value. These small but crucial data items can be sent separately via more secure means to those few who really need to know them. Even if intercepted this separate information data will be out of context making its value questionable at best in most cases unless you can connect all the dots.

There will always be knowledge and information that must be protected from the enemy but we must be much smarter and more selective about how we do this, or we face the very real risk that military knowledge transfer operations will be severely hampered, or even shutdown altogether in the future.

Impediment #3 – Perceived erosion of traditional authority and control

The military by long tradition is a very vertically oriented structure. Soldiers in this structure are used to information and knowledge primarily flowing from top to bottom with the person at the top of the structure being the unchallenged authority figure.

Social media is rapidly changing this paradigm however. Now Soldiers can easily bypass the traditional vertical structure and communicate horizontally internally or externally with almost anyone they choose. This is causing a lot of angst among some

military leaders, especially older ones, over perceived erosion of their traditional authority and control role.

This angst is not new and has been occurring in the civilian world for some time as well. For example not too long ago few would have dreamed of challenging or checking their doctor's diagnosis because the Doctor was perceived as the local authority on the matter and you had no easy access to anyone who could tell you different. Now we do it routinely. Your doctor makes a diagnosis, or prescribes a test or medication, and you run home and check it out on the Internet for validity or at least a better explanation and if there are other options. This has led to some rather embarrassing incidents for some Doctors who hadn't kept up with the latest medical trends and found this out from their patients. Many older Doctors as a result are having a difficult time adjusting to this brave new world where they are no longer necessarily the ultimate authority in the eyes of their patients.

This erosion of traditional authority and control is happening all over the professional world and it is not going to go away. If anything this trend will continue to accelerate as social media comes to dominate our world. Now this trend is happening in the military as well.

Years ago I as a Soldier could only go for knowledge or experience to the person over me who was local. This person might not have been as knowledgeable or experienced as I needed but they were all I had available. Now I can go onto the Internet and log-on to a professional military community of practice and find out what I need to know 24x7 anywhere in the world from some of the top and most experienced people in the field. This is naturally going to make some leaders who are used to being authority figures uncomfortable and feeling less needed.

When implementing knowledge transfer initiatives into your organization expect to occasionally run into this impediment. Few leaders will admit up front to this publically or privately however so this will be something you most likely detect as an undercurrent with them. The more senior and older the leaders are the more likely you will see this behavior in action.

What you must do to overcome this impediment:

- Educate the leaders that they must accept that a *little* loss of authority and control is not necessarily a bad thing as it often leads to better battlefield performance as their Soldiers can draw on knowledge and experience from the entire profession anywhere in the world, and not just a few at the local level. This helps take some of the burden off of those leaders which allows them to concentrate on other matters. In truth the only real role they are giving up is as resident guru which many of them in truth may not be anyway.
- Educate them that they should not fight this trend, as it is a losing battle, but instead encourage their Soldiers to make use of all available knowledge and experience resources.
- Educate them that ultimately their Soldiers will respect them, or not, based on perceived competence and concern for Soldier welfare.
- Reassure them that regardless of these trends they are still the boss and final decision maker at the local level. In the end what they say still goes no matter what.

Impediment #4 - Lack of middle to senior level leader buy-in

Lack of middle to senior level leader buy-in is one of the major reasons that many military knowledge transfer initiatives fail within organizations. Not obtaining this prior to implementation almost always either ends with failure or subpar results.

To achieve buy-in for your knowledge transfer initiatives requires a combination of education, reassurance and a good understanding of human psychology and behavior. It is not enough to just be another good idea. This impediment will often be coupled with other impediments in this chapter such as WIIFM.

One of the big mistakes that many military knowledge management personnel make is to only seek buy-in at the senior leader level. While obtaining senior leader buy-in is important it is often the middle level management and leaders that will make your initiative work, or not.

It is human nature that individuals want to be consulted and be a part of the decision-making process. When individuals are bypassed they often feel resentment toward those that have bypassed them. At best this often results in those individuals not giving full endorsement and support toward your initiative and at worst they actively or passively resist it. Such resistance can often spell doom for even the most promising of military knowledge transfer initiatives.

Impediment #5 - Lack of trust

One of the most underappreciated aspects of military knowledge transfer is the role that trust plays in the overall process. If you lack this understanding then I can certainly sympathize as it took me a couple of years working military knowledge management before I began to fully appreciate just how important trust is in the knowledge transfer process.

Most individuals do not feel comfortable transferring their own hard-won personal knowledge and experience to other individuals that they do not first have some degree of trust in. It is not simply enough to know or work casually with the individual. As an example would you transfer your own personal knowledge and experience to someone you did not know well, or at all, unless forced?

The more trust that exists between individuals the easier knowledge will flow and the higher-quality that flow will be. Simply put trust acts as the grease for the knowledge transfer process. The more trust that exists the less resistance is encountered.

Building trust requires that people interact at some social level where they can come to personally know each other. This can be best orchestrated through the process of structured socialization. Structured socialization is covered in detail in another chapter of this book so I won't cover it here.

Building trust online is very difficult to achieve although as newer generations become more comfortable with online social media this may well become less of a factor over time. The problem here is the inability to socialize, meet and get to personally know those online people as we do in our normal "in-person" lives.

This is the major reason I believe that the percentage of individuals who actively contribute in online military communities of practice has been fairly low over the years despite our best efforts to encourage more active participation. The trust factor just isn't there or the level is insufficient.

Impediment #6 – Culture

One of the definitions for culture which comes from the 4th edition of the American Heritage College Dictionary is “*the predominating attitudes and behaviors that characterize the organization*”. This definition of culture can also apply at the national or international level as well.

Culture can be a real challenge to overcome especially if the culture you are dealing with:

- Does not encourage knowledge or experience sharing, and may even actively discourage it. This is often seen in military organizations whose leadership tends toward the authoritarian.
- Places artificial boundaries between people. Examples might be that officers are not encouraged to casually socialize with enlisted personnel or a class system exists that does the same thing. With no ability to socialize there is no way to build trust between individuals, which is a major pre-requisite for efficient and rapid knowledge transfer to occur. This is a common problem often seen by the U.S. military when attempting to train allied forces in some nations.

Education that stresses the benefits of knowledge transfer and the cost of not doing so, think *WIIFM factor* here, is the only way to overcome this impediment. In some nations this can be an extremely tough nut to crack since you are going against what is seen as society norms, attitudes and behaviors.

Communities of Practice

Defining a community of practice

Online military communities of practice are an unquestioned knowledge management success in the U.S. Army. In my daily efforts and interactions with Army institutions and commands from 2005-2010 I found however that the concept of a Community of Practice (CoP), also known as a *Professional Forum* (PF), is not well known and sometimes even misunderstood by both leadership and Soldiers. So that we have a basis for understanding here is a good working definition of a community of practice which comes from Wikipedia:

“A community of practice is according to cognitive anthropologists Jean Lave and Etienne Wenger, a group of people who share an interest, a craft, and/or a profession. The group can evolve naturally because of the members' common interest in a particular domain or area, or it can be created specifically with the goal of gaining knowledge related to their field. It is through the process of sharing information and experiences with the group that the members learn from each other, and have an opportunity to develop themselves personally and professionally (Lave & Wenger 1991). CoPs can exist online, such as within discussion boards and newsgroups, or in real life, such as in a lunchroom at work, in a field setting, on a factory floor, or elsewhere in the environment. While Lave and Wenger coined the term in the 1990s, this type of learning practice has existed for as long as people have been learning and sharing their experiences through storytelling.”

Communities of practice can exist either virtually online on the Internet or in-person in your local area. For most of this chapter we will be discussing virtual online communities of practice.

Understanding a community of practice

Rather than relying on a single *subject matter expert* (SME) that we have used in our social structure in the past, CoPs ad-

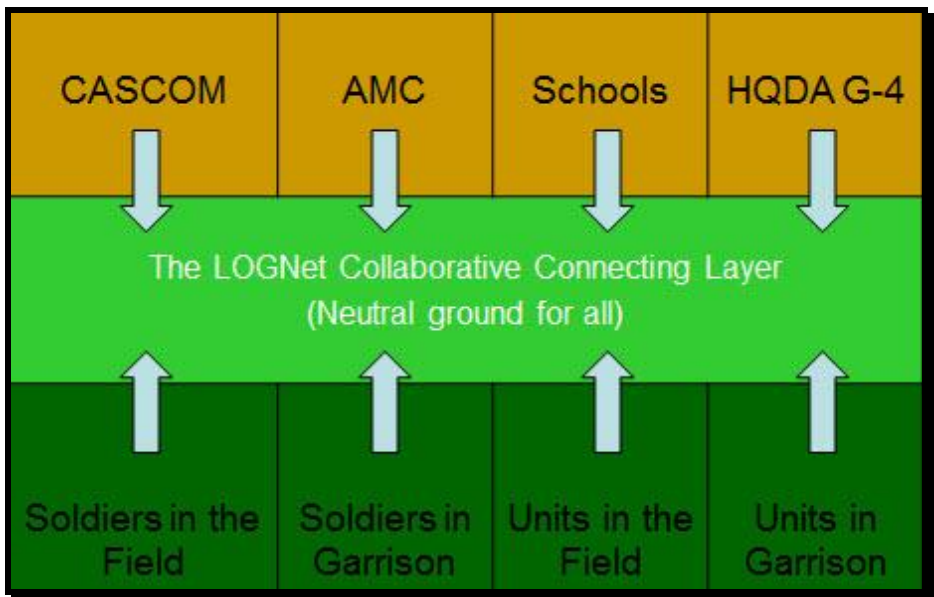
vanced the concept when technology finally allowed us to connect people across the world in a single online community of practice. Using CoPs, the collective group becomes the SME to develop better solutions. Traditional SMEs are important in this process as they need to be involved in the CoP and the discussions contained there. The CoP doesn't replace any institutional processes; it simply allows them to operate more efficiently by moving critical information and knowledge quicker. They also serve to help its members, another institutional process, much more efficiently.

CoPs are a radical knowledge transfer based departure from past website and portal practices. Unlike CoPs, most websites and portals are designed with "top down" development and control in mind. By top down we mean that the online site is organized and run by whichever command or institution that originally created it. In the past the Web was used as a place where information was housed for many people to consume. In this environment, the only way to logically display content was from the top down to ensure that the best and most critical information is displayed.

Top down control fits in rather naturally with Army traditions and ways of doing business, and is well understood and accepted by the field Army that by nature is a strict hierarchal organization used to functioning from the top down. Top down sites are excellent for simply displaying information to organizations or soldiers and will most likely always be around to fill that need. Such top down websites are not designed for social interaction or horizontal knowledge sharing between its members.

CoPs on the other hand are "*bottom up*" sites. Too much control from the top can at worst destroy these sites and at best severely impairs their performance. Under the right conditions, they can grow like a wild fire and be enormously beneficial to the community that they are serving. They exist for their members, and the community members determine their development for the most part. Under the CoP model, the membership of that CoP controls the evolution and general direction of the CoP, as well as its content and taxonomy. A single command or institution should not exercise control over a CoP that it is simply a member of. Commands and institutions benefit from and exert their influence

in a community by encouraging their individual members to participate for the benefit of the individual, command, or our Army. This bottoms up control and operation of an online Army site is often contrary to what most seasoned Army personnel are used too and some may feel uncomfortable with it. Such CoPs excel at horizontal knowledge sharing and allow for a maximum of social interaction for its members while connecting all members of the profession as shown in the slide below which I made for the LogNet CoP in 2006.



What military online communities of practice do for the Soldier:

- Facilitates the rapid transfer of knowledge and experience from those who have it to those who need it.
- Provides an online secure place to share the latest thoughts, ideas, tactics, techniques, and procedures (TTPs) and lessons learned regardless of rank or duty position.

- Provides the ability to Network with fellow peers to become better at what they do. Professional networking is the key to breaking the age old cycle of constantly reinventing the wheel.
- Provides peer driven professional and technical mentoring.
- Provides topical content, tools and knowledge to assist professionals in the field.

What the intent of online military communities of practice is:

- The Soldier, not the institution, becomes the primary source of new knowledge and experience for other Soldiers.
- Reduce the time needed to resolve problems.
- Increase the number of innovative or breakthrough ideas.
- Transfer best practices from one Soldier to another in near real-time.
- Better prepare Soldiers for the battlefield.
- Avoid costly, life threatening situations on the battlefield.
- Reduce the cost of mission accomplishment through superior knowledge transfer.
- Fill the knowledge gap between doctrine and TTPs learned at military schools and the practical application in a changing combat environment.
- Efficiently support Soldiers by generating knowledge “on the fly” as needed by harnessing the collective minds of a particular profession. Precious time is not wasted collecting extraneous information.

Why online military communities of practice are successful:

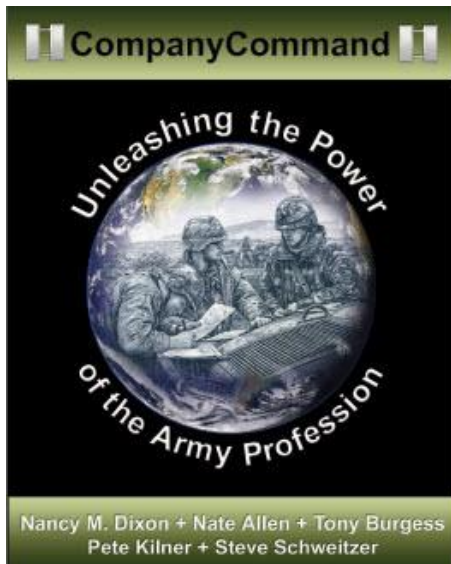
- It’s all about the Soldier’s profession or function.
- Member driven content is relevant and soldiers are drawn in to find answers to accomplish their daily mission.

- They are neutral ground for all.
- They cross all military profession or function boundaries.
- Passionate members and volunteers.
- Minimal bureaucracy permitting agile response.
- Content is driven by membership and covers today's relevant issues.
- Have little to no perceived bureaucracy present.
- Not a huge file repository to get lost in. Information is archived to keep only current and relevant knowledge.

CoPs in the U.S. Army

The first Army sanctioned online military CoP was CompanyCommand. This CoP was created specifically to serve the knowledge and experience transfer needs of all company commanders throughout the U.S. Army and anyone who is a company commander, or about to become one, can become a member of that CoP.

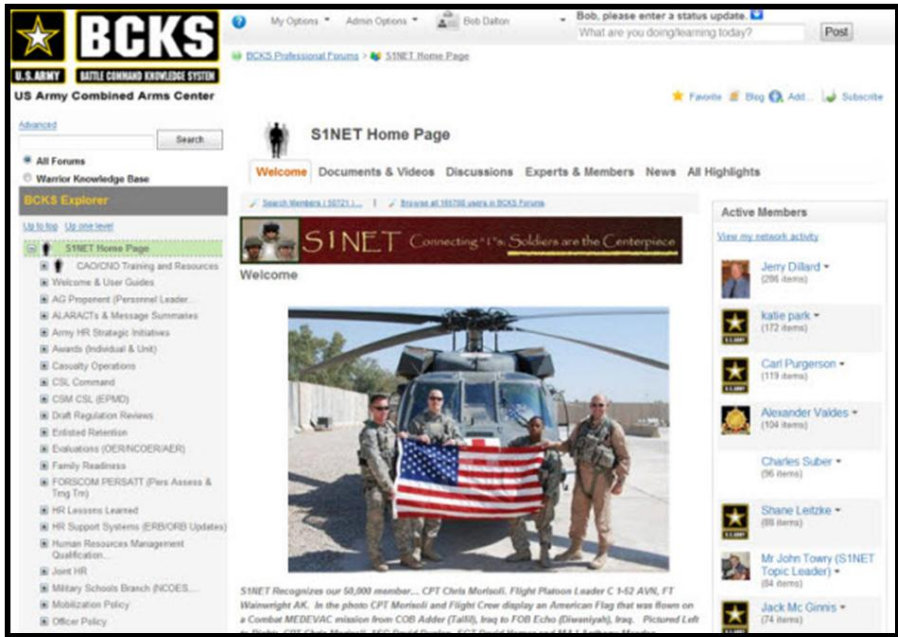
CompanyCommand is a highly successful military CoP by any measure and certainly a fine example of what can be done by



CoPs in the Army. In 2005 the staff of CompanyCommand published a highly influential book called "*Company Command: Unleashing the Power of the Profession*" which discussed their experiences and how the CoP operates. It is a must read for anyone interested in understanding how to create and operate a highly focused online military CoP. See the recommended books appendix at the end of this book for details on that book.

Based on the success of CompanyCommand, and its later established sister CoP, PlatoonLeader, the Battle Command Knowledge System (BCKS) was created at Fort Leavenworth, Kansas in 2004 by the Commanding General (CG) of the Combined Arms Command (CAC) with the intent of spreading this type of capability throughout the Army. Such capability was felt by the CAC CG to be very powerful in allowing the Army to adapt more quickly than our enemies. Additionally, it was felt that our soldiers would share their knowledge out on the open Internet if the Army didn't provide an adequate and secure online place for them to communicate with their peers.

Upon activation BCKS created a number of additional military CoPs to serve soldier needs such as NCONet , S1Net and LogNet. As of 2010 there are now a large number of military sanctioned, sponsored and secure communities of practice. Most focus on a specific military profession, function or area of interest and are facilitated by qualified knowledge management contract facilitators who keep them professional and on focus. Below is a screenshot of the S1Net CoP which was taken in 2010.



My own personal experiences with military CoPs

In December 2004 the U.S. Army Logistics Network (LOGNet) was created by BCKS in conjunction with Major Richard Kreuzscher at HQDA G-4. In early January 2005 I came on to the LogNet CoP as a logistics retiree member and contributed my extensive logistics and supply knowledge and experience to the other members whenever or wherever I could. My passionate knowledge transfer efforts were noticed by Major Kreuzscher and in mid-February of that year I was invited to become the full-time facilitator for that COP as a contractor for BCKS.

Here is a picture of the LogNet CoP which was taken in late 2006:



Unlike the CompanyCommand CoP, which has a very narrow focus of Company Commanders, LOGNet's focus was extremely broad and covered all Army logistics personnel and logistics battle staff in all grades to include Department of the Army Civilians and associated logistics contractors. LOGNet was one of the first CoPs established with such a broad focus. It had to be designed to serve the knowledge needs of a force of over 250,000 personnel in the Army.

From the start, the goal of the LOGNet support team composed of myself and Major Richard Kreuzscher, the assigned Army Forum Leader from HQDA G-4, chose to focus on the entire logistics profession. We quickly realized that we had to allow for the three Army branches that collectively formed that profession, Quartermaster (QM), Ordnance (OD) and Transportation (TC), to each have a branch sub-community on the CoP while also allowing for high level topics which cut across all branch boundaries. This is why LOGNet is a profession based professional forum or CoP. Because of its size Major Kreuzscher and I found ourselves constantly pioneering new CoP and KM ground.

Humans tend to identify themselves by what they do rather than who they are with. Understanding and applying this psycho-

logical element to a massively large CoP is crucial if that CoP is to be successful for its members. It has been our experience that when it comes to large scale CoPs with broad focus, Profession based sites tend to resonate the most with Soldiers. On a day-to-day basis I have found that most people visit a CoP in order to obtain help for their current job. This taxonomy we set up on the LogNet CoP helped them to find the material that they needed quickly.

Our approach toward this CoP was very successful and in April 2006 we won the coveted E-Gov Institute 2006 Knowledge Management Award for the Knowledge Management Initiative Delivering High Value to a Broad User Community/Supporting Agency Mission category.



In 2007 the Combined Arms Support Command (CASCOM) at Fort Lee, Virginia took over sponsorship and operation of LogNet from HQDA G-4 and re-named it to the Sustainment

Network (SustainNet) community of practice. I departed shortly thereafter. Before I departed the CG, CASCOT awarded me the *General Brehon B. Somervell Medal of Excellence* by the CG of CASCOT for my work with LogNet. This was the 17th CASCOT award of this medal and one of the very few ever awarded to a contractor.



Photo taken in 2006 with the P.S. Magazine staff while visiting Red Stone Arsenal in Huntsville, AL. From left to right MSG Half Mast, Connie, myself, Bonnie, Major Kreuzer (HQDA G-4) and Belinda Terry (LOGSA).

In June of that year I moved on to other job responsibilities within BCKS which included:

- Supervising a team of CoP facilitators.
- Creating and teaching the first three iterations of a new one week long Army facilitator training course.
- Creating, launching and facilitating a new CoP specifically for military knowledge management professionals called KMNet.
- Taking over and facilitating the struggling ProtectionNet CoP. This CoP serves the needs of combat engineer, military police and chemical military professionals.
- Takeover and facilitating the struggling IED Defeat Community of Interest (COI). This COI serve the knowledge and experience transfer needs of all soldiers facing improvised explosive devices on the battlefield.

In December 2007 I was awarded a Master Facilitator Certification, one of the first three in the Army, by BCKS. From 2008-2009 my duties at BCKS continued to change and I would hand over during that period the IED Defeat and ProtectionNet CoPs to other facilitators while being tasked by BCKS to create, launch and facilitate the new Military Gaming Network (MilGaming) community of interest (COI), which I did until I left BCKS in August 2010. In total I facilitated six military communities of practice from 2005-2010 and five of them still survive and are in operation as of fall 2010.

The importance of facilitation

Communities of practice are first and foremost communities of human beings. People want and need to deal with other humans whenever and wherever possible and will not often tolerate automated substitutes for very long. When given a choice between an automated solution and a human being, most people will automatically choose the human to deal with every time.

On a community of practice facilitators are the human face and representative of those who sponsor or host that community. Any community of practice that has a goal or mission to achieve

needs human facilitation in order to be successful and we have proven this in practice many times over the years.

Experience at BCKS since 2005 has shown that communities of practice which have no trained facilitator assigned to them tend to struggle, especially in the beginning, and often are not successful in the long run, although there are some exceptions to this.

Facilitators in a community of practice provide the following essential skills and capabilities:

- Promote socialization and online networking within the community.
- Approve or deny community membership requests.
- Identify, recruit and manage Topic Leaders to support the community of practice and the membership.
- Moderate and facilitate all asynchronous conversations and discussions.
- Review and either approve or deny each new content contribution to the community.
- Enforce operational security within the military community.
- Help community members connect with the appropriate subject matter experts.
- Support and manage community growth and forward movement.
- Develop and manage community structuring.
- Manage community content.
- Facilitate member driven knowledge transfer special projects.
- Screen and recommend selected community members for recognition awards.
- Schedule, coordinate, and help conduct community wide special events.
- Create and maintain member help documentation and tutorials.
- Handle member inquiries of all types.
- And much, much more!

A major lesson learned - The critical need for getting sponsor and stakeholder buy-in for a new CoP

To ensure early success a military community of practice should only be created and established after a careful planning and coordination process has been gone through first. During the years I worked at BCKS they had a well thought out methodology for how to establish a new military community of practice.

Part of this intricate methodology involved identifying, contacting and obtaining potential stakeholder buy-in for a new military community practice prior to creation. A stakeholder in this case is any organization, command or institution that has a major supporting role to play in the community practice. Unfortunately, only rarely did I ever see any of the methodology actually being used for its intended purpose, let alone obtaining stakeholder buy-in when a new CoP was created and launched. This occurred for a variety of reasons to include ongoing priorities, lack of resources, inter-command politics or in response to a command directive from some higher headquarters.

In fact many of the military communities of practice that were established in the first few years after 2004 were done often at the sole instigation of BCKS with little or no involvement from the organizations or commands that would be served by that CoP. This lack of buy-in from stakeholders led to many struggling communities of practice early on and an over reliance on contracted facilitators to obtain buy-in after-the-fact, which mostly didn't happen. Obviously this is not the way to establish a military community of practice if you intend to be successful and around for the long haul!

The ProtectionNet CoP is a case in point. When I took over facilitation of this struggling CoP in 2007 it had few members and little activity. One of the first things I did was to make contact with the senior leadership of the Maneuver Support Center of Excellence (MSCoE) at Fort Leonard Wood, Missouri to find out why they were not much involved with the ProtectionNet CoP. The MSCoE is the Training and Doctrine Command (TRADOC) designated training center for all Army engineers, military police and

chemical corps personnel. These personnel were the target audience for the ProtectionNet CoP and thus the MSCoE was a major and crucial supporting stakeholder. I was told by the senior leadership that they had not been consulted or involved with the creation of this CoP and as a result felt no responsibility toward making it successful. Some of the people I talked to were even downright hostile to the CoP and felt it was a rogue operation beyond their control or influence. It took some months, and a lot of personal diplomacy on my part, to overcome this but eventually we did get them to buy in and support the CoP. ProtectionNet is now successful and functioning well as of fall 2010.

Don't forget face-to-face communities of practice!

Most military leaders only believe that communities of practice are only online entities. Not so! Community of practice methods work even better face-to-face than they do online due to the ability to build trust in person. Face-to-face communities of practice allow all personnel who share a common practice to periodically meet and discuss issues that concern the community. An example might be all engineer platoon sergeants or squad leaders in a combat engineer battalion periodically getting together to learn from each other. Everyone in that squad or platoon shares the same basic practice of combat engineering and they talk among themselves constantly exchanging experiential knowledge, and always have, if for no other reason to increase their individual and collective odds of survival. The need for social networking and social learning opportunities applies just as equally with physical on the ground entities such as these, as they do for online CoPs. Combining this with structured socialization, covered elsewhere in this book, enhances the effectiveness of this type of CoP.

Virtual Worlds - The Next Generation of Military Virtual Communities of Practice

Virtual worlds are a truly breakthrough online technology that has matured considerably in capability and ease of use since first going online on the commercial Internet for public use in 2003.

Only in the last few years though has this new technology matured to the point that it offers potential usefulness to the military.

In early 2008 I began exploring this technology on behalf of the Battle Command Knowledge System (BCKS) at Fort Leavenworth, Kansas with an eye toward adapting and integrating it into ongoing Army knowledge management operations and perhaps as a future replacement for existing two dimensional communities of practice.

Virtual worlds, such as SecondLife, are popular because they provide an immersive three dimensional online synchronous experience for those who use them. Few who explore this technology want to go back to the two dimensional way of doing things. Why is this?

We humans are born in a three dimensional world and are naturally equipped to understand how to navigate and function in it very easily. This is one of the major reasons that people often find navigating in two dimensional software so difficult, it's simply not natural to us.

Virtual worlds mimic our real world in people, terrain, structure and objects to the extent that computer graphics over a constrained bandwidth Internet can allow. These virtual worlds use three dimensional physical representations of us to do things while in that world. These physical representations in the virtual world are called avatars.

As in the real world, if you want to go somewhere in a virtual world all you have to do is point your avatar in the right direction and have it walk there. The same thing can also be said for conversations. If you want to talk with someone you walk your avatar up to their avatar and initiate a conversation, as you do in real life. It is this human intuitive way of doing things, coupled with a powerful sense of presence, that makes virtual worlds so appealing to people.

From my own personal experience in the SecondLife virtual world I can attest that it is amazing how little time it takes for you to see your avatar as an extension of yourself and quit thinking of it as separate entity. Put simply, your avatar becomes you.

Virtual worlds also add unique capabilities not possible in the real world. Examples of this would be the ability for your avatar

to fly, teleport from one location to another in an eye blink, or to construct structures or objects that can defy gravity or be underwater.

Virtual worlds can also allow those who use them to change the appearance of their avatars to almost anything they can imagine, and in seconds.



I offer as an example of this flexibility the picture to the left. This photo image is of my SecondLife avatar *Tanstaaf Brim*, who usually wears a suit, done as my virtual military alter ego Master Sergeant (MSG) Sapper. As you can see from the photo MSG Sapper is fully equipped for combat in the desert and appears as a modern combat soldier. I could just as easily have changed my avatars gender or

made him into a doctor, fireman, first responder, insurgent, robot, animal or just about anything else I desired!

This inherent flexibility to change your avatars appearance totally has enormous implications for storytelling, role playing and experiential based learning and training in the military.

Virtual worlds offer superior synchronous socialization, meeting, learning and collaborating capabilities to those who use them. Couple this with the other benefits mentioned earlier and you have the potential for virtual worlds to be the next generation platform for communities of practice for the military by 2011, if not sooner.

What would a community of practice look like if we were to build one in a virtual world? As an example let's take the Knowledge Management Network (KMNet) Community of Practice, which I have been facilitator and operated for the Army as a contractor from 2007-2009.



Picture of LTC Greg Pickell who is the project officer for the U.S. NEXUS military virtual world. Taken at the Federal Consortium for Virtual Worlds Expo (24-25 April 2008)

If we were to build KMNet in a virtual world it would consist of a cluster of linked building structures or a single multi-story building. In the cluster each linked structure would equate to a single topic on the existing KMNet. Within that structure would be one or more small meeting rooms, an office for the topic leader(s), a socializing area, and a library for document storage and multimedia. For a multi-story building each floor would serve each topic and be similarly equipped. For KMNet overall there would be one or more large conference rooms for community wide events as well as some additional common meeting rooms and offices.

The structures in the virtual world could look like anything we want such as an existing military building in the real world, or a fanciful creation straight out of our imagination and history. The structures can be on the ground, in the air or space, or even underwater. Only your own imagination limits the possibilities!



A photo I took while visiting a virtual conference center in a virtual world

When members come to the virtual World version of KMNet they would come in through the main entrance to the complex and be able to use self-serve information kiosks to receive or sign up for the KMNet newsletter, see the current event schedule, download free takeaways, view tutorials and of course receive directions to the topic floors or structures. These kiosks are automated and can serve members 24x7 even when the facilitator is absent. Members can also meet with the Facilitator, if present during the time they visit the community. This human to human contact often reinforces the feeling of community for members and is highly desirable. After they are done with the kiosks or meeting with the facilitator they would then proceed to the structure, or floors, that interest them where they can interact with any other KMNet members who are present.

Before we can move from two dimensional virtual communities of practice to those based in a three dimensional virtual world for the military we must first overcome some serious issues. These are:

- Security. Current commercial virtual worlds are relatively unsecure. Only unclassified information can be on, or discussed, at those sites. Our potential enemies also use those same sites. This effectively renders such civilian virtual worlds as not practical for use by U.S. military communities of practice which often discuss *For Official Use Only* (FOUO) matters or have FOUO content.
- Lack of online access. Most military personnel cannot access commercial virtual worlds from their military computer systems due to military firewalls not allowing such access. Until this changes, commercial virtual worlds will mostly remain off limits to most soldiers.
- Lack of persistent asynchronous capability. Most existing virtual worlds focus almost entirely on synchronous capabilities. While synchronous capability is superior to asynchronous, it is not always practical for a military that must be functional 24 hours a day around the world. The ability for members to leave persistent information, discussions and knowledge at the community of practice for others to view when they come online must be allowed for. For virtual worlds to succeed for the military they must incorporate or allow for the asynchronous discussions and content storage capabilities which are present in the current generation of community of practice software.
- Computers that can handle the graphics requirements of virtual worlds. Depending on the virtual world platform this may or may not be an issue. Older military computer systems that have integrated motherboard based graphic chips will be the most affected by this.
- Scalability. Some existing virtual worlds have limited avatar capacity in the same location at the same time. For example in SecondLife the practical limit is 40 avatars on an island at the same time. For the military 40 avatars would be way to low when it comes to meetings, conferences and training. There are some workarounds for this depending on the virtual world involved. This is

not however a problem for all virtual worlds. US-Nexus for instance has a much higher avatar capacity.

- Limited broadband capacity. Virtual worlds are much more bandwidth intensive than the two dimensional software we currently use for our communities of practice. Many Soldiers have limited to no broadband access making their access to virtual worlds of any type difficult. As broadband becomes more common in the field over time this will change.

If it were not for the issues mentioned above it would be possible to utilize these virtual worlds for military communities of practice *now*.

Passing on military CoP Lessons learned

- To be both effective and successful a CoP should be professionally facilitated. Unless a CoP is specifically officer oriented, the best facilitators tend to be those who are recently retired, well connected senior NCOs or Warrant Officers, with a broad range of experience that come from the profession or job function that the CoP serves. Passion, if it exists in such individuals, is a major success multiplier!
- Humans tend to identify themselves by what they do, rather than the command, organization or unit they are assigned to. As a result CoPs that are either profession or job function based tend to be the most successful. Examples of this would be Armor or Infantry for profession and company commander or platoon leader for job function. Such CoPs automatically have a large and often eager ready-made target audience on day one of initial operation.
- Online military CoPs should be created and deployed for every military branch and major job function. Avoid creating CoPs based on knee jerk reaction or in response to the "fad of the moment". I saw this happen way too much at BCKS and as a result we had too

many CoPs, most of which were not successful and not enough coverage in the right areas.

- When planning for the creation and launch of a new CoP it is critical to identify, contact and get buy-in early on from those organizations, commands or institutions that may have a major supporting role in that CoP. Not doing so will drastically lower the odds of long-range success for that community.
- Avoid communities of interest. These are similar to CoPs but built around an issue of common interest. These tend to be very hard to make successful because they serve issues of often transitory nature and are very niche. A better way to do this is to make this a topic on an already established community, if at all possible.
- The most successful CoPs have strong participation of passionate volunteers from the membership acting as topic leaders. Volunteers easily outperform Soldiers who are tasked to be a topic leader by a factor of over 10-1 on average. Passion simply cannot be conscripted. This has proven so true in practice that I actively discourage any Army institution or command that suggests conscripting their folks to be topic leaders on a CoP. With darn few exceptions it just doesn't work well.
- It is very hard for sponsoring institutions and stakeholder to resist applying top down management approaches to a CoP. Trying to run a CoP from the top down will eventually *destroy* it. CoPs must be primarily member focused and driven by the needs of its members.
- Units do not come on CoPs, *individuals* do. CoPs do not differentiate between operating and generating forces. They treat all members equally regardless of what unit; organization or institution the member comes from. Because of this CoPs are best sponsored at the Army HQ level. When sponsored at the major command level below Army HQ level (example TRADOC or FOSCOM) inter-command politics unfortunately tends insinuate itself. A military CoP should serve all members equally regardless of where they come from or are based.

- Resist having too many rules for the members. I have found that in the absence of rules the members tend to act very professionally on a military CoP. In fact in most of the military CoPs I have facilitated I had no rules posted for the members at all and there were fewer problems as a result than many of those CoPs that tended to have rules.
- The CoP member is the *ultimate* validator for any knowledge or experience posted on the CoP by any other member. After all they are the ones who must decide if the knowledge or experience is valid and whether they should personally use it or not. Something that is posted on the CoP that is incorrect, or even flat wrong, often gets addressed and corrected by other members almost immediately. The profession is good at policing itself when given the chance. Give them that chance!
- CoPs must be *neutral* ground for all, regardless of rank. Anything less will stifle the free flow of knowledge and ideas.
- CoPs must be integrated into and used in the Army classroom at all courses ranging from entry level to professional. By using the CoPs as a collaborative knowledge sharing or social learning component of the military learning process the student will be taught to depend on fellow members of the profession for answers and help once they leave the course. As a wise senior warrant officer once taught me "*you don't have to know everything, just where to look for it*". Students who have just returned from the battlefield should also be encouraged to post any new knowledge or experience that comes out in the classroom to the CoP as well. This benefits everyone.
- Retirees should be allowed onto all military communities of practice that are not classified. Retirees have much to contribute in the way of knowledge and experience and often have the time to do so. These personnel make excellent volunteer topic leaders and mentors. This is an

excellent way to bridge the continuity gap between current personnel and those that have retired.

- When designing CoP taxonomy a good rule of thumbs is that no member should ever be no more than four clicks *maximum* away from what they are looking for after logging onto the CoP, and less is better.
- There is no one-size-fits-all template for CoPs. Each CoP is highly individual and serves a distinct audience with its own specific needs. Trying a cookie cutter approach to creating and operating CoPs will result in nothing but glorified websites in the end.
- Initially established taxonomy and structure for a CoP will largely be replaced within six to twelve months of initial operating capability due to member needs and the direction they take. The taxonomy and structure should never be allowed to become static and must be allowed to evolve in response to the needs of the CoP membership.
- The goal should be that the CoP is a normal and seamless part of the daily professional life of each and every Soldier served by that CoP.
- When planning for a new CoP, understand that the issue of who is going to control it is often paramount, if unspoken, in the minds of the stakeholders you contact. Stakeholders need to understand early on that when it comes to communities of practice their role is primarily one of supporting and guiding, rather than controlling.
- If you can't find a way of salvaging it then be ruthless about closing down any CoP that doesn't become successful in a reasonable amount of time (typically 1-1/2 to 2 years). BCKS had a hard time doing this because leadership did not want to chance getting into heated political battles over the close down. As a result BCKS ended up with a number of non-viable CoPs that had little activity or participation but consumed resources that were often in short supply, like trained facilitators.

- CoPs should never be established on a whim, which sometimes I have seen occur. There must be a clearly demonstrated need for them, and a large enough and active enough target audience, to give them a reasonable chance of being successful over the long haul.
- A facilitator should only have one community of practice as his or her facilitation responsibility. A facilitator who has to divide his or her attention among multiple CoPs has a hard time being successful at it, and I have met few that have been able to pull it off. A facilitator must develop a deep sense of stewardship toward a community and become intimately involved with both its members and stakeholders. This is hard to do if your attention is divided between multiple CoPs and the question always comes up from members and others on which CoP is getting the lion's share of the facilitator's time and interest.

Summary

If a leader does just *one* thing for his or her Soldiers in the way of knowledge transfer it should be to ensure that all the unit's Soldiers are aware of, and make use of, the various online military communities of practice which serve their professional needs. This will also directly benefit the unit by ensuring that the unit's Soldiers have the best possible help, subject matter experts and advice available that their profession has to offer them.

Wikis

Wiki Technology

Wiki technology has been around for several years now and most readers of this book will be familiar with what a Wiki is from their experience on Internet sites such Wikipedia. For those few not familiar with what a Wiki is, here is a definition from Wikipedia:

“A wiki (pronounced WIK-ee) is a website that allows the easy creation and editing of any number of interlinked web pages via a web browser using a simplified markup language or a WYSIWYG text editor. Wikis are typically powered by wiki software such as Wikimedia and are often used to create collaborative wiki websites, to power community websites, for personal note taking, in corporate intranets, and in knowledge management systems.”

One term that will be used throughout this chapter is *portal*. On a military Wiki, a portal acts as a community or sub-section within the overall Wiki for all articles/pages that are under categories that belong to that portal. The main purpose of such a portal is to allow military users to easily find related content rather than have to dig through many thousands of articles to find what they are looking for. An example would be the SOP Portal. Such a portal would have all SOPs and related articles and pages on the Wiki listed under it. If you are a Soldier looking for a SOP on field sanitation you would go to the SOP Portal to find it.

Understanding what Wikis represent

In my dealings with Soldiers and leaders on Wiki technology it became apparent that many of them tended to fixate too much on the term “Wiki”, often to the detriment of understanding the basic capability it represented. While Wiki technology has been around for several years it is only very recently that it has gained traction in the U.S. military. Why is this? In my opinion one of the major reasons is the hype and fascination with the word “Wiki”, and all of the terminology surrounding it.

The result of this has been the too slow acceptance and use of this Internet technology by the main stream U.S. military. When it comes to Web technologies we must learn to see *beyond* the hype and terminology and focus on the core capabilities that these technologies bring to bear to help us resolve existing military problems.

When we look at Wikis what are we really seeing in the way of core capability? If you boil it all down to its essentials it is simply the next generation of military word processing. What makes it next generation compared to what we have now? Instead of word processing software being based on a standalone computer, as you are used to with existing word processing software applications such as Microsoft Word, it is based on a server instead. This is often referred to in the civilian world by the term “*cloud computing*”.



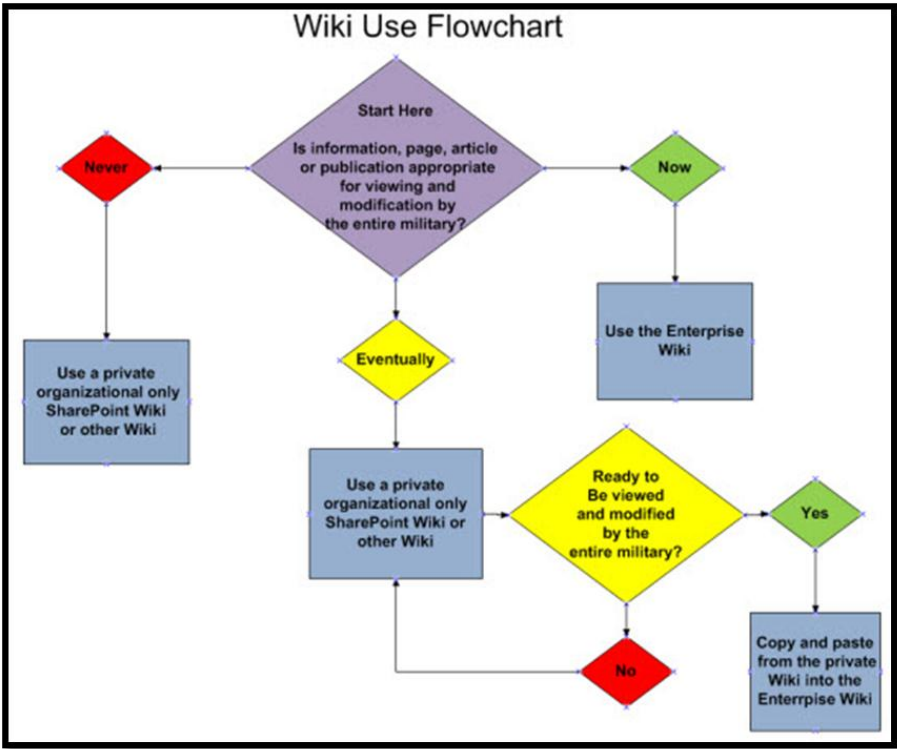
The concept behind cloud computing is fairly simple. The software application and data it generates is not stored on your personal computer system but on a central online server accessible via the Internet and which you utilize via your web browser.

The advantages of cloud computing are many. Here are some of them:

- There is essentially just one copy of the software application which resides on a server that needs to be upgraded by IT personnel instead of many, many copies each having to be upgraded constantly on every standalone computer system. This neatly solves the problem we often run into with individual computers where we find different versions of the software application because of failure to upgrade. With cloud computing the version of the software a person is using is the same for everyone.
- All data, information and knowledge generated by these applications are recorded and stored on the server cutting down the need for larger hard drives on individual computer systems.
- Loss of data due to local hard drive crashes is no longer an individual Soldier problem as the data is stored on the server and is backed up constantly by the server operators. As many Soldiers don't backup anyway, despite constant warnings about this problem, this is a good solution to preserving Soldier generated data.
- You can access both the application and data from any computer that has an Internet connection and a web browser. You no longer have to worry if a given version of a software application resides on a specific computer before you can use it as you must now.
- Server based word processing allows for easy visibility of what we author. It also allows for rapid and fairly easy collaboration with others in the generation, evolution and management of any codified knowledge or information. This capability alone justifies moving to this technology!
- Tends to be more secure. Instead of data residing on thousands of individual computer systems it is on one large server system instead.

Right now the military is focusing on using Wiki technology to do fairly limited things but once people realize that this is really the next generation of military word processing I predict there will be a strong push, most likely coming from the grass roots, to quickly bring this technology down to the Battalion or possibly below level.

While enterprise wide Wikis are needed for the military there is going to be a need for internal *unit only* Wikis in order to collaborate and work on internal only codified knowledge and information such as unit level training, Op Orders, annexes and other similar items. Eventually Wiki technology will become ubiquitous and commonplace throughout the military at all levels and the standalone word processing software we have used for so many years will go the way that its predecessors such as the manual typewriter did.



MilWiki - The Army's enterprise Wiki

The U.S. Army's enterprise Wiki is called milWiki and serves the general collaborative publishing needs of the entire Army. milWiki is a secure Army "For Official Use Only" (FOUO) level online site and is open only to U.S. military personnel. milWiki began as a small wiki developed by PEO C3T for Army Team C4ISR users and was originally known as the KC Wiki, or Knowledge Center Wiki, based on the Army Team C4ISR Knowledge Center. The Knowledge Center wiki supported five major Army organizations or components that make up Army Team C4ISR.



Above: Screenshot of the milWiki home page

In June 2008 this wiki expanded through an existing partnership with PM Acquisition Business within Program Executive Office Enterprise Information Systems (PEO EIS). KC Wiki then became Green Force Wiki based on an Instant Messaging/Web Conferencing tool for the Army Acquisition community called

Green Force Tracker. In less than a year's time the wiki grew to over 20,000 users with hundreds of Army and sister service organizations building articles.

With its transformation into milWiki the Program Executive Office Command Control Communications Tactical (PEO C3T) partnered with the Army Knowledge Online (AKO)/Defense Knowledge Online (DKO) portal to expand the focus from Army to an overall Defense Knowledge Online capability through existing AKO/DKO authentication. PEO C3T acted as an incubator in this community experiment and met at the time with numerous Department of Defense organizations to gain support in its effort to become a living encyclopedia for the Military. As of fall 2010 milWiki has many thousands of article pages covering the gamut of all things military.

How I got involved with military Wikis

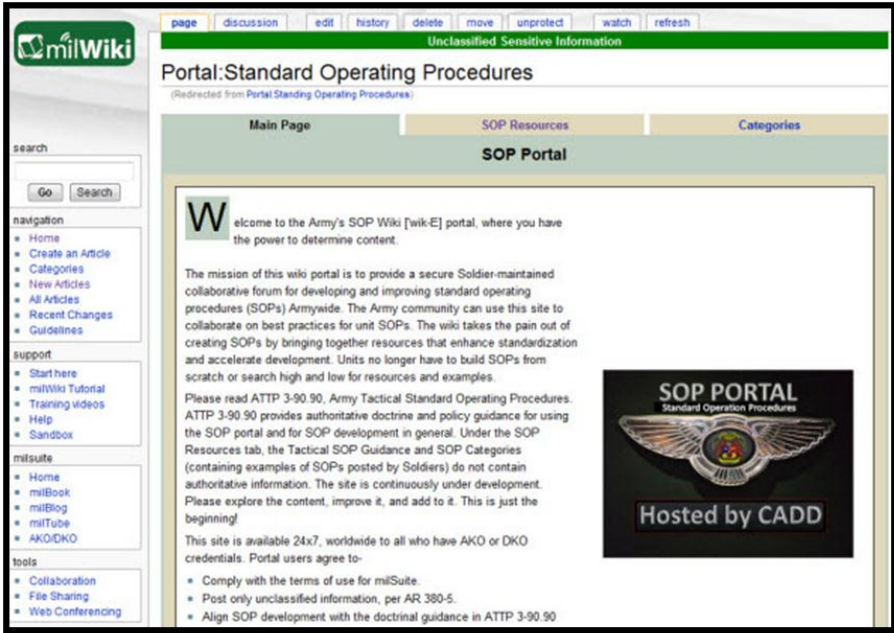
Early on I stumbled upon the embryonic milWiki and quickly realized the power of this new capability. I worked long and hard to convince the leadership at the Battle Command Knowledge System (BCKS) at Fort Leavenworth, where I worked at the time as a contract senior knowledge manager and facilitator, to consider integrating Wikis into military knowledge transfer efforts. As a result I became the de-facto liaison between BCKS and the milWiki staff and helped to bring exposure to this emerging military collaborative publishing technology. On my own initiative I would end up of creating and managing several portals on milWiki over time. These were:

- **The SOP Portal:** The mission of this wiki portal is to provide a secure Soldier-maintained collaborative forum for developing and improving standard operating procedures (SOPs) Army wide. The Army community can use this site to collaborate on best practices for unit SOPs. This takes the pain out of creating SOPs by bringing together resources that enhance standardization and accelerate development. Units no longer have to build SOPs from scratch or search high and low for resources

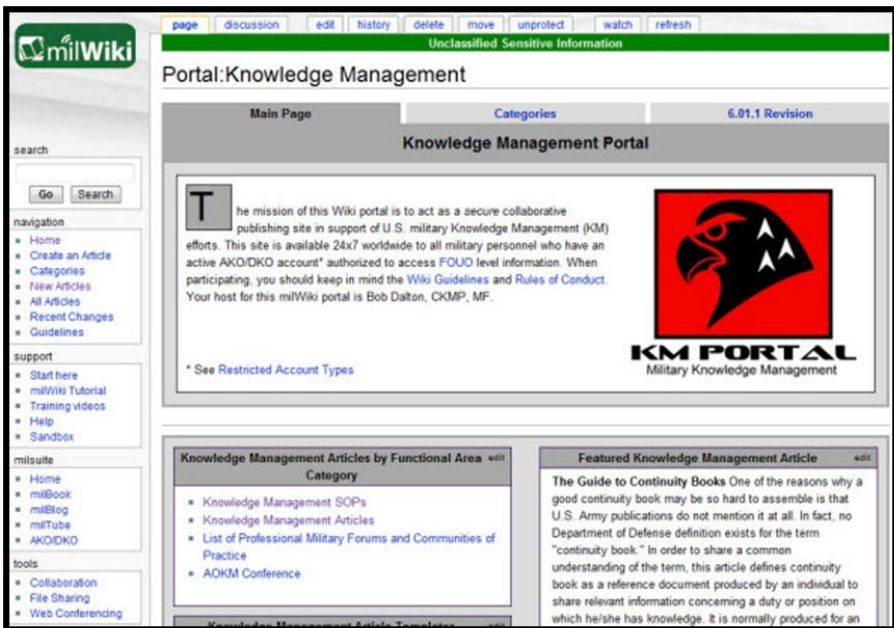
and examples. Instead of thousands of people creating thousands of versions of the same SOP, there can be one best of breed version of the SOP that thousands can use and help to keep current. Eventually I was asked by the Director of the Combined Arms Doctrine Directorate (CADD) at Fort Leavenworth, Kansas to allow them to take this over and manage it, which I agreed to. They now operate and manage that portal.

- **The KM Portal:** The mission of this Wiki portal is to act as a secure collaborative publishing site in support of U.S. military Knowledge Management (KM) efforts. I still operate and manage this portal on a volunteer basis as of fall 2010.
- **The Army Units Portal:** The mission of this Wiki portal is to act as a single Army Wide Soldier maintained secure unit directory/locator which allows for full contact and other important information not possible to be displayed on publically accessible Internet sites. I still operate and manage this portal on a volunteer basis as of fall 2010.

Here are some screen shots of those portals.



Above: Screenshot of the SOP Portal on milWiki



Above: Screenshot of the Knowledge Management Portal on milWiki



Above: Screenshot of the Army Units Portal on milWiki

As MilWiki became better known I found myself increasingly doing special Wiki related tasks and special projects. In the next section I will discuss in detail one of the largest and most ambitious of these projects by the U.S. Army to use this technology to allow Soldiers to collaborate and refine tactical doctrine in near real time, and what we learned from it.

The Army Doctrine Reengineering Project

In May 2009 the Training and Doctrine Command (TRADOC) Commanding General (CG) at Fort Monroe, Virginia decided to undertake a pilot project where a selected number of doctrinal field manuals (FMs) were migrated from their traditional format to milWiki where Soldiers could participate in their continual refinement and evolution. This new format was called “*Army Tactics, Techniques and Procedures*” or ATTP for short.

The Battle Command Knowledge System (BCKS) at Fort Leavenworth was tasked to put together a Tiger Team to make this happen. The Tiger Team portion of the TRADOC Wiki Doc-

trine Pilot Project took place from 21 to 30 June 2009 at Fort Leavenworth, Kansas and other locations. The Tiger Team was responsible for creating the actual Army Doctrine Portal on milWiki and migration of seven selected Field Manuals (FMs) to the new ATTP format for Army wide use on the milWiki Army Doctrine Portal. This portal was to be under the control and management of the Combined Arms Doctrine Directorate (CADD), also located at Fort Leavenworth.

The first day of the project was largely devoted to working with the separate policy group for the pilot project to reach decisions on what the Army Doctrine Portal page on milWiki should look like and how it should be structured. What made this process unique was that as decisions were reached by the policy group they were put into reality on milWiki in real time.

Before the first FM could be converted to ATTP on milWiki the policy group had to decide on a standard way to tie all milWiki pages together in a book manner. The decision was to do this through the table of contents for that FM/ATTP. The table of contents template went through two different versions and much discussion before deciding on the final format which was to be as close in appearance as possible to the original FM table of contents.

As with the portal page policy group decisions were implemented on milWiki in real time as they were agreed on. This table of contents template took about two hours to build and once completed was locked (ie; protected) so that milWiki users could not change it in any way as they could with the individual section and chapter pages. While FM's often have separate pages for the different sections of a chapter we found by trial and error during the migration process that it is often better to have all sections of the chapter on just one overall chapter page which greatly reduces the number of overall milWiki pages for that ATTP.

During this project we found by experience that personnel assigned to migrate a publication to a Wiki should have all of the following skills:

- Basic Microsoft Word processing copy and paste skills.

- Basic Microsoft word processing text reformatting skills.
- Can do image work. This entails:
 - Extracting the images from the FM using screen capture or using existing separate images.
 - Cropping and resizing the image if required.
 - Upload the image to the Wiki.
 - Insert the image into the correct position on the Wiki page.
 - Creating a new image if a separate image cannot be extracted from the FM.
- Are comfortable building tables in Microsoft Word.
- Good attention to details skills.

The ability to work with images to the degree required will often be the limiting factor in many cases. We found during the migration experience for this pilot project that when working with personnel they tended to fall into one of the following three categories when it came to skills:

- **Basic:** Only comfortable with copy and paste and to a very limited degree text reformatting. Roughly 40% of our group fell into this category.
- **Intermediate:** Comfortable with copy and paste, reformatting, table creation and to a very limited degree image work (just inserting). Roughly 30% of our group fell into this category.
- **Advanced:** Comfortable with everything. Roughly 30% of our group fell into this category.

When organizing and preparing for migration of a publication to a Wiki you must understand first that there often no easy way to automatically import a Microsoft Word document or Adobe PDF document into a Wiki page as most Wiki software at the time I write this (Fall 2010) does not have that capability. The only way to do it is by *manually* copying and pasting text one chapter at a time

from the publication into the Wiki matching page and then recreating the tables and uploading and inserting the images. This can be a time consuming and tedious process although as people get used to it the time requirements go down for each consecutive FM after the first.

I acted as central coordinator and final quality control for all work and taskings in order to avoid as much as possible posting conflicts or what we called "*fratricide*" on the milWiki. Fratricide occurs when two or more personnel are editing the same milWiki page and post more or less at the same time. The last person to post an edited version of given page on milWiki will always be the one shown resulting in the other persons edit work not showing, or showing as an older version in the history tab of the milWiki page.

Fratricide and keeping people from working in the same areas of a FM became more of a problem over time as the number of people involved in the migration process increased and the team became more geographically dispersed. This coordinator position became absolutely essential as the Tiger Team grew in size over the next few days in order to migrate the remaining six FMs to milWiki ATP by the original 1 July 2010 deadline set by the TRADOC CG.

We accomplished the migration flow process in the order shown below:

- **Copy and paste:** This step involved copying and pasting each chapter from the FM into the matching chapter of the milWiki ATP. Individuals each handled separate chapters to keep possible fratricide to the minimum. Procedure was to copy and paste from the Microsoft Word format version of the FM directly into the WYSIWYG or RTF editor on the milWiki page. If you have personnel who only have minimal computer skills this should be where you should assign them reserving the higher skilled personnel to do the other steps as they follow after the copy and pasters. We had no lack of copy and paste personnel near the end of the migra-

tion but were short of personnel having more advanced levels of skill which slowed things down.

- **Text reformatting:** This step involved reformatting the copied and pasted text to get it to appear as close as possible to the original FM format while leveraging the power of Wiki functionality such as the ability to have an internal page table of contents that can be clicked on to go quickly without scrolling to any section of that page. Reformatting usually involved breaking up the text so it would appear correctly and elimination of extra formatting such as line breaks (ie;
) from the copied and pasted text which resulted in unneeded extra spacing between paragraphs. Any bulleted text from the original FM also had to be re-bulleted during this process. As a side note early on it was decided by the policy group that paragraph indentation included in the original FMs did not have to be done in the milWiki ATTP so all text is left aligned.
- **Images:** This step involved extracting, uploading and inserting each image from the FM into the appropriate spot in the ATTP. In a number of cases we had to create an image from scratch ourselves from the FM. Creation of the image involved taking a screen shot of the image in the FM and then cropping and resizing it as needed before upload and insertion. This became very tedious in some cases. In one of the FMs there were over 52 images in one chapter alone!
- **Tables:** This step involved recreating each table from the FM in the ATTP in the appropriate location. If a table was too complex to easily recreate then an image of that table was created and used instead. The drawback to use of images for this purpose is that the image cannot be edited by milWiki users but can only be replaced.
- **Quality control:** Performed by the central coordinator to ensure that everything matched the FM as closely as possible before moving to the next FM. Where simple problems were identified they were usually fixed by the coordinator.

The copy and paste people generally divided up and worked in two or more FMs at a time. The reformatters and people who did the images and tables followed closely behind to turn the raw copied and pasted text back into something more closely resembling the original FM. Despite our best efforts there were occasional fratricide events resulting in wasted work as people jumped ahead unknown to others.

While there are a lot of variables that can effect time estimates here are some estimates based on my experience with the Tiger Team you can use to figure the average time per given task required for any publication. These time estimates assume that individuals have the entire required skill set. If not, increase by a factor of 25% for the first publication you migrate:

- Copy table of contents from existing publication, paste it into a new table of contents (TOC) page and modify it: 1 hour.
- Copy and paste any amount of text into one chapter page on milWiki: 3 Minutes.
- Reformatting text: 30 seconds per FM paragraph.
- Extract, upload and insert image: 3 Minutes per image.
- Re-create one table: On average 7 minutes per table.
- Quality control: 10 minutes per chapter.

The milWiki project Tiger Team began as a quickly put together ad-hoc operation and grew over time in order to accomplish the TRADOC CG's mission order. If it weren't for the above and beyond dedication of the various team members at the time, like Mr. Todd Miller from milWiki, we might not have been able to meet the TRADOC deadline.

The TRADOC CG was pleased with the results and quickly ordered an expansion of the project. BCKS organized another event to accomplish this at Fort Leonard Wood, Missouri from 17 to 21 August 2009. I was responsible during that time for training personnel from various doctrine proponents throughout TRADOC on how to migrate a Field Manual (FM) to a milWiki ATTP format.

This training was conducted in a “hands on” manner where at least nine additional FMs were to be migrated to milWiki ATTP. As preparation for this event each attendee from the various proponents was instructed to bring one existing FM of their choice which they were responsible for as proponent in Microsoft Word document format to the event. All training conducted was live and in person.



Above: I am giving training on milWiki and the migration process

In the morning of the first day all personnel attending the event met collectively in the classroom for an orientation on what was going to happen during the event and why. A variety of personnel from both CADD and BCKS conducted this. In the afternoon personnel broke up into track #1 (governance and policy) and track #2 (FM migration training) and went into separate classrooms. Twenty hours were allocated during the event for track #2 mission accomplishment. This time would be spent in milWiki training and migration of an average hundred pages of FM with moderate table and images.



Above: Major Paul Fradejas from CADD is giving assistance to Mr. Phil Tackett during the event

The track #2 personnel were given a quick orientation to Wiki capability in general and milWiki specifically. After that they immediately commenced working on their own individual migration projects. The intention throughout track #2 was to keep platform training to the *absolute* minimum and concentrate on purely hands on training in a “one-on-one” way. At the beginning platform training was mainly used to introduce them to how to build a table of contents for their ATTP and to accomplish that task.

There was always a temptation to impart too much information to the attendees and this had to be resisted by all instructors. Early on I made a conscious decision, especially given the initial negative reaction by the attendees, to use a layered approach to training. By this I mean that I would give them simple bite sized tasks to accomplish and as their comfort level increased I added on new layers one-on-one via the assistant instructors as they felt a specific individual was ready for it. This method worked extremely well and helped to quickly increase the comfort level of the attendees. Setting up successful personal learning instead of mass training was the goal here.

After outlining the tasks to be accomplished much negativity was experienced from the attendees. The general consensus of

the attendees, who felt overwhelmed initially, can be summed up as *“you’ve got to be kidding”* and *“no way can this be done during the allocated 20 hours of the event”*. This negative consensus is consistent with personal experiences and attitudes from event number #1 which took place in June 2010 and should be anticipated by anyone undertaking a similar project for the first time with people untrained on how to use a Wiki. As with all technical computer related collective training or learning, experience levels of the attendees were mixed. Some had excellent computer and software skills and some struggled initially and had to be given more personal attention. The one-on-one method was especially invaluable in dealing with this situation and overall prevented one or more personnel from holding everyone else back at the beginning.

On day two attendees worked on their individual ATTP migration projects. As they ran into issues they were given one-on-one assistance by one of the instructor staff on demand. Everyone was permitted to work at their own speed but understood the task had to be completed prior to close of business on the third day. Breaks were strictly as you needed them. At periodic points where all appeared to be struggling with a specific task we would have a general time out and address this as a discussion at the class level meant to explain and quickly resolve the problem. By mid-day of the second day attendees had calmed down considerably and the attitude started to change from that experienced on day one to a newer more positive attitude that this was not as hard as it appeared initially and was very doable within the time provided. This also coincides with what was experienced during the June 2009 event with the participants.

By day three progress was excellent and on track toward on time completion. Attendees were now relatively confident in their skills and more or less relaxed about being able to achieve the goal successfully. Some folks were finishing early so we shifted them to assist others which had larger publications to migrate. By shifting help to others we allowed all to complete their projects on time. After completion of the ATTP migration we took some time to cover the “finer points” and tips that we were unable to cover

earlier. All assigned FM's were successfully converted to milWiki ATP by close of business of that day.

The five days allocated to this event proved to be dead on. Monday and Friday are travel days with Tuesdays through Thursday used for what needs to be accomplished. Similar such events should be structured the same way based as follows:

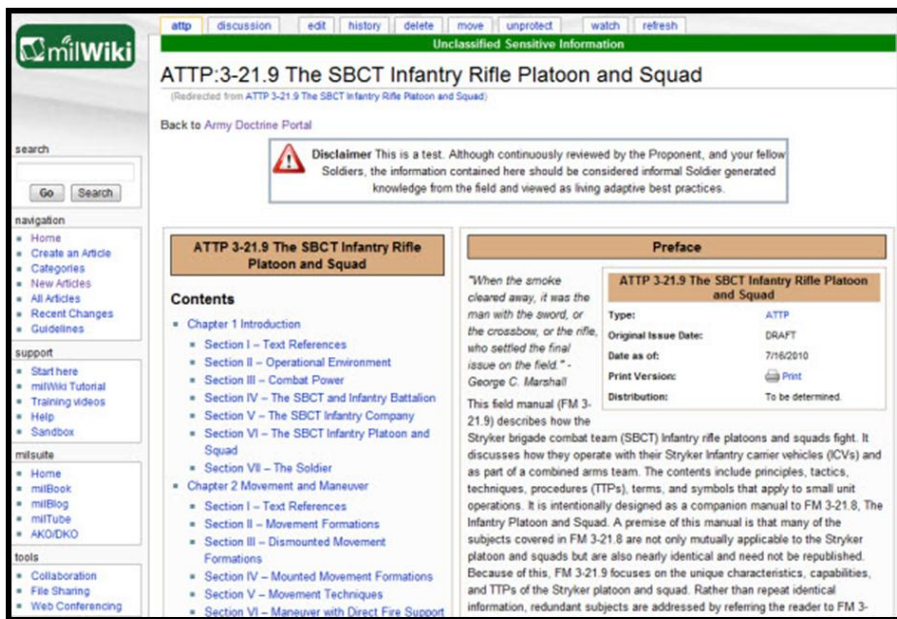
- The morning of the first day for orientation.
- The afternoon of the first day for basic Wikis skills training and laying the groundwork for the task.
- Second through third day for task completion.

Time required is based on an average needed for migrating 100 printed pages of material with a moderate amount of images and tables to milWiki. As of the fall of 2010 the Army is well on its way to migrating all existing FM's to milWiki.

Here is a screenshot of the completed Army Doctrine Portal on milWiki.



Below is a screenshot of a completed ATTP on milWiki:



Lessons Learned when migrating existing military documents and publications to a Wiki

- Use only Microsoft Word document versions for migration purposes if at all possible. Copying and pasting directly from Adobe PDFs causes a lot more reformatting problems.
- Use only final published versions of the documents or publications. Drafts tend to cause a lot more headaches in reformatting. Once the document or publication is migrated you can always go back and modify as needed.
- If you are migrating many documents or publications, or have a sizeable group of personnel involved, a central coordinator is a must to avoid fratricide. Fratricide is when two or people are working on the same Wiki article and post changes at the same time. When they post at the same time one of the individuals loses his or her

changes. The best plan is not to having anyone working on the same thing such as the same chapter out of a field manual.

- Save often during lengthy edit sessions! Sometimes when posting things went wrong and changes were lost.
- Do not indent! Left align all text.
- Protect (ie; lock) the table of contents page and specific other pages you do not want Soldiers to be able to edit (example: Introduction).
- Have one or more individuals from the proponent who “owns” that specific publication “watch” each page of that publication. Doing this will ensure that the designated individual will receive an email notification any-time that page or any portion of it is edited by anyone else.
- In general avoid building code or special formatting from scratch. Explore other already migrated military Wiki pages to see how others do it. When you find something you like copy the code and paste it into your Wiki page. Reuse is a major goal for Wikis.
- Graphics are the biggest challenge in the migration process. The process of copying images from the original document and pasting them to Microsoft paint (or other graphics program) so they can be resized before uploading them to the Wiki is time consuming. The other challenge with graphics is getting them placed where you want them and making sure the text around them looks right.
- Migration speed increases over time as those personnel involved in the migration process become more familiar with the Wiki editing process.
- If a chapter from a publication you intend to migrate has an extreme number of sections, or is way too long, you will probably need to consider breaking it up into separate Wiki pages.
- If two people with the same skill level are assigned to migrate the same publication and no separate coordina-

tor is possible consider as a simple expedient toward avoiding possible fratricide having one person take “even” numbered chapters and the other the “odd” numbered chapters. When working on the appendixes and other unnumbered areas of the FM assume they continue the numbering sequence of the chapters. For example if the last numbered chapter is “7” then the first unnumbered Appendix “A” would be treated as if it were chapter 8. Appendix B would be considered chapter “9”, etc.

- Fear of wrong or incorrect content added by Soldiers from the field tends to be much overblown. We found from experience that Soldiers tend to act very professionally and generally only make modest changes, additions or refinements to what is published on the military Wiki.
- Governance, and who controls content and how on a military Wiki, is major issue that must be worked through early on before documents and publications are migrated. Basically you must ensure that someone is responsible for a Wiki page and manages it. You must also reassure people that in the end they still exercise final control over what gets published.
- Requirements to keep past changes to documents or publications in order to meet legal requirements for record storage can pose challenges as the software may not support infinite storage of changes made.

Summary

Wikis offer a powerful online collaborative publishing capability to the military, not previously available, and which is quite mature as a technology as of fall 2010. Military leaders should fully harness this capability and require all future documents and publications meeting any or all of the following criteria to be published on a secure military Wiki instead of the traditional way:

- Requires periodic updating, or is subject to obsolescence or continual change.
- Requires coordination among a number of people who are dispersed.
- Requires input from the field.
- Requires collaboration to author or maintain.
- Those who will need to read it are dispersed over a wide area or globally.
- When crowd sourcing is desired.
- Where knowledge and experience transfer is desired or is a goal.

Knowledge Transfer by Gaming

Gaming has come a long way

Commercial computer gaming technology has been around since the late 1970s. These early games were very primitive by today's standards. While fun to play they were not very useful for serious military training since they did not come even remotely close to being realistic simulations of combat. The computer systems of the time simply lacked the power and means to do so. Another major factor is that the game software was often fixed and did not allow for the players to modify the game or create new additions for it.

Over the years graphics processors and computer systems in general have gotten more and more capable and continue to do so. The current level of commercial computer gaming technology has reached the point that civilian combat games of the *first person shooter* (FPS) variety often come uncomfortably close to military reality on the battlefield. This advancement in gaming technology has led the military of many countries to consider use and purchase of these games for serious applications such as tactical combat training.

What makes these civilian games of interest to the military is that most of them now allow the game players themselves to easily modify, or "mod" as it's often referred to, almost all aspects of the game in order to create new scenarios, behaviors or additions of their own. This ability to "mod" greatly extends the power and usefulness of the game to the players and is a fairly recent trend in gaming technology.

In this chapter we will discuss how such games can be used as an efficient and rapid knowledge transfer tool in the military and how this can be accomplished.

VBS2 and the U.S. Military

While there are several notable commercial-off-the-shelf military games that we could discuss here I will be concentrating on one example called *Virtual BattleSpace 2* (VBS2) from a company called Bohemia Interactive Simulations which is revolutionizing company and below level tactical training in the U.S. military. Why this specific game example among many? This military FPS tactical combat game is ideally suited to be a rapid knowledge transfer medium. While we will discuss VBS2 here any commercial-off-the-shelf game with similar capabilities could also be used in a like manner.

In 2004 the U.S. Marine Corps was the first Department of Defense military service to purchase a commercial-off-the-shelf (COTS) tactical combat game called *Virtual BattleSpace 1* (VBS1) for company and below tactical training. As with any new technology there were initial teething pains but the Marine Corps experience with this game was largely positive and the game was well received by those who used it.

In 2008 based on U.S. Marine Corps experiences the U.S. Army purchased an enterprise license for the for the next generation of that game called *Virtual BattleSpace 2* (VBS2) . Here are some bullets about VBS2 that will help you to understand in brief what it is:

- VBS2 is a commercial-off-the-shelf game-based training platform, incorporating a very high-fidelity virtual environment, scenario editors, after-action review, HLA/DIS compliance and a powerful development suite. The unique VBS2 simulation engine provides extremely realistic virtual environments, with large, dynamic terrain areas, hundreds of simulated military and civilian entities and a range of generic, geo-typical terrain areas.
- Trainees move about in a shared, immersive, first-person environment that supports mounted and dismounted operations, combat platforms, small arms and vehicle-mounted weapons.

- VBS2 is tailored for tactical and combined arms training and mission rehearsal, and can be used for a wide range of virtual simulation purposes, including visualization, development of training packages, UAV training and IED defeat.
- Everything that happens in a VBS2 mission, to include radio chatter, is recorded and can be played back for all others to view using the built in AAR process. VBS2 allows for Soldiers to see what other Soldiers saw, to see what missiles and bullets and other fired ordnance saw just prior to impact on target, and to hear exact radio chatter at any given time point in the mission.
- In 2009, 70 VBS2 training systems, consisting of 52 computers, were fielded to 53 U.S. Army, Army Reserve and Army National Guard sites both CONUS/OCONUS. This comprises a fielding of over 3600+ computer systems dedicated specifically to VBS2! This count is expected to double by 2011.
- VBS2 is used in daily training by the forces of many militaries to include the U.S. Army, U.S. Marines Corps, UK MOD, NATO, Australian Army and Canadian Forces.

There are two versions of VBS2 in the U.S. Army as follows:

- **The full version.** This is provided to each military installation in one or more platoon sized packages. It includes all equipment and software needed to run and administer the game. The software includes the capability to perform a comprehensive after action review (AAR) of a scenario being used in the game, record all radio chatter and contains a built in suite of design tools. The graphics in this version are very high fidelity.
- **The light version.** This is a stripped down version of the full version and is provided to Soldiers for installation on their home computer systems. Level of detail is less than the full version, there is no AAR or communi-

cations recording capability, and design tools are minimal and fairly limited. The purpose of this version is to allow Soldiers to become familiar with the interface (ie; buttonolgy) and to design scenarios that are upwardly compatible with the full version. Soldiers can play this game over a network with up to 11 other individuals.



A picture of a military VBS2 workstation taken by me at Fort Leonard Wood, Missouri in 2009

VBS2 is being continually improved and new capability modules, such as extremely comprehensive fire support, are being added all the time.

How I got involved

I am an avid computer war gamer and have been so since 1979 when I bought my first computer. Because of this interest I keep a keen eye on computer gaming trends. When VBS2 started

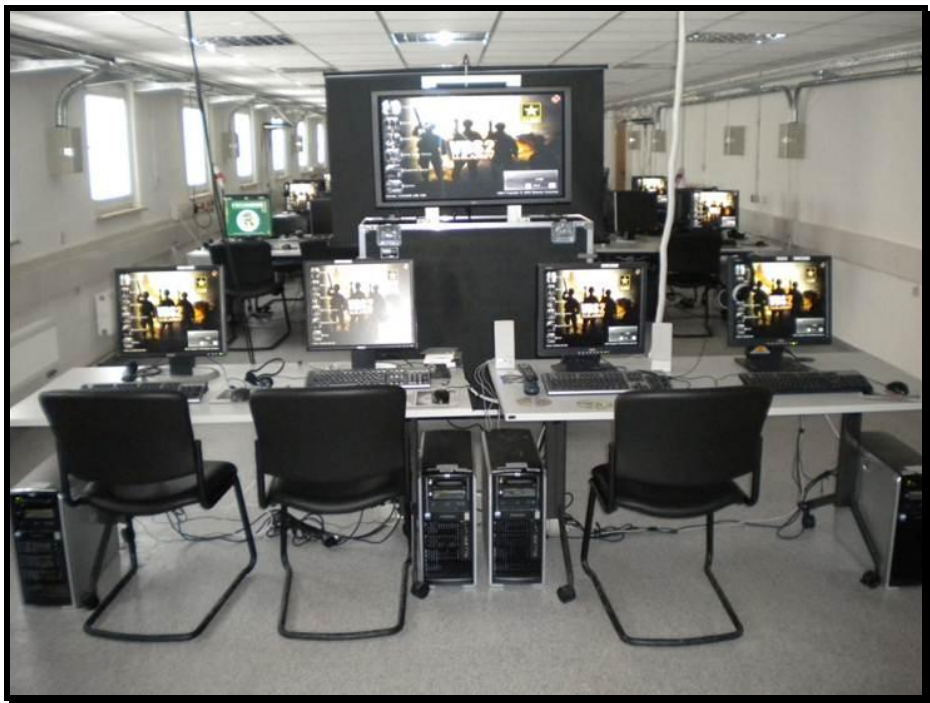
being fielded in 2009 in the U.S. Army I quickly brought it to the attention of the Battle Command Knowledge System (BCKS) at Fort Leavenworth, where I worked as a contracted senior knowledge manager. I felt that that this game had potential to be an excellent knowledge transfer tool and should be explored by BCKS for that purpose.



This is a photo of a typical VBS2 Training site

From 4-8 May 2009 at the direction of BCKS I attended the Virtual BattleSpace 2 (VBS2) new equipment training (NET) administrator's course given at the Maneuver Support Center of Excellence (MSCoE) building at Fort Leonard Wood, Missouri. This course was conducted by the U.S. Army Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) out of Orlando, Florida. I had been tasked by BCKS to explore the possibility of integrating gaming into military knowledge transfer operations. I was the only knowledge manager in the class.

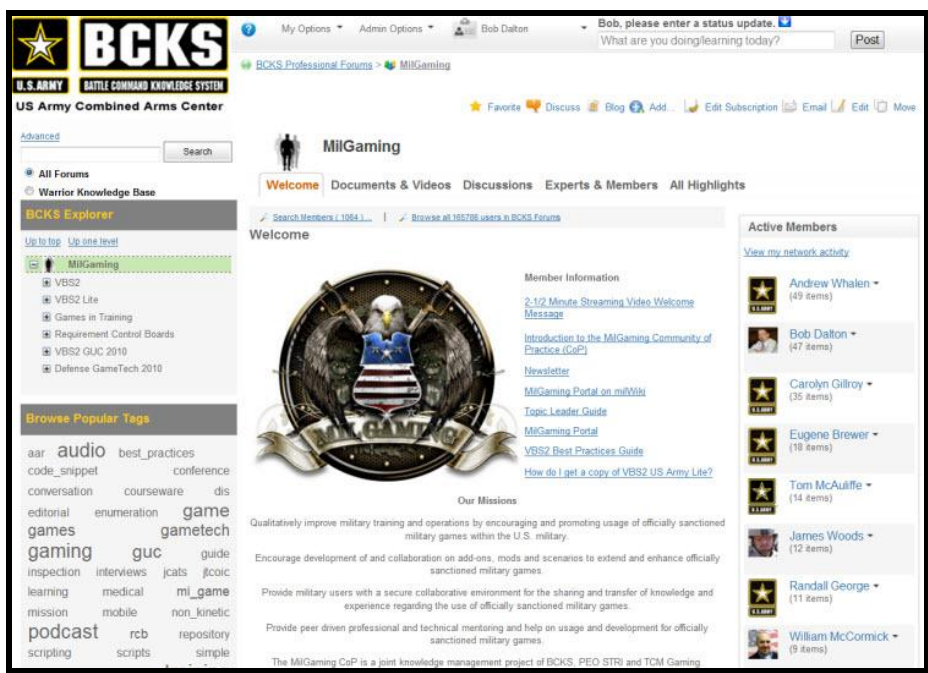
What I personally learned and experienced during that week about VBS2 convinced me that I was seeing the unleashing of a *truly* disruptive technology that will forever change the way the military conducts tactical level knowledge transfer operations. For those not familiar with the term *disruptive technology* it is a term coined by Harvard Business School Professor Clayton M. Christensen to describe a new technology that unexpectedly displaces an established technology.



Another photo of the same VBS2 Training site

On 13 May 2009 I wrote a whitepaper for BCKS titled “*Virtual BattleSpace 2 (VBS2): The first of a new class of 3D collective tactical level knowledge transfer tools*”. This whitepaper led to the creation of the online MilGaming Community of Practice in December of 2009. This military community of practice became a joint knowledge management project of BCKS, the TRADOC Capability Manager for Gaming (TCM Gaming) and PEO STRI and is open to all U.S. DOD personnel and DOD civilians.

I was selected by BCKS to be the first full time Facilitator for that community of practice and I performed that duty until my departure from BCKS in late August of 2010. The MilGaming community of practice continues, with a different facilitator, to thrive as of the writing of this book, although now under the *Center for Army Lessons Learned* (CALL) at Fort Leavenworth, Kansas. I continue as a member of that community and still periodically contribute where I can.



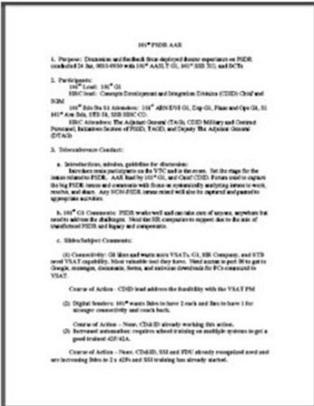
Screenshot of the MilGaming CoP

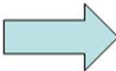
How games such as VBS2 can be used for rapid knowledge transfer

VBS2 represents the first of a new class of commercial-off-the-shelf mass issued tactical level 3D collective knowledge transfer tools. Where does this tool fit into the military knowledge transfer toolkit? The following graphic sums it up best:


It all comes down to: *Would you rather read about what 3rd platoon experienced out on the battlefield or experience it yourself?*

From traditional paper AAR, Lessons Learned and Vignettes





To 3D experiential knowledge based unit playable scenarios that can be used repeatedly and modified for "what ifs". The ultimate in unit tactical knowledge transfer between units!



In the past we had Soldiers and units prepare after action reports (AARs), lessons learned or vignettes on significant tactical events in order to help units and Soldiers learn from what was experienced. These documents could only be read however and what was experienced could not be repeated by those who read such documents, nor easily visualized.

With VBS2 we can do much better by doing the following:

- Interview or debrief small tactical units that have experienced a tactical level event worth replicating in order to provide sufficient details to craft a tactical level VBS2 scenario.
- Design and develop a dynamic VBS2 playable scenario based on what was experienced and learned. The design and development of such scenarios is well within the technical capability of most computer literate military personnel.

- Distribute the scenario and to allow other small units to play and relive the experience in order to understand and learn from what happened. What if's can also be performed in the scenario on the fly, if desired in order to explore possible alternate outcomes based on different actions being taken within the scenario.

Most commercial games, including VBS2, come with a variety on non-historical scenarios for use by the players. While useful they tend to lack the feeling of credibility that often comes with scenarios that are based on real battlefield engagements such as the COP Keating scenario discussed below.



Screenshot taken from VBS2. Photo courtesy of Bohemia Interactive

To maximize knowledge transfer we must ensure that when units are de-briefed after significant battlefield engagements that what was learned and experienced is rapidly turned into VBS2

scenarios that can then be distributed to friendly forces across the entire war zone to ensure that other units can learn from what was experienced.

Quick design and development of scenarios can allow for follow on unit rehearsals for similar tactical level events. An example would be rehearsing for what a platoon does when the convoy they are part of is ambushed or an IED explodes. This is tactical experiential based knowledge transfer at its best!

The Battle for COP Keating

On 3 October 2009, Soldiers of Bravo Troop, 3rd Squadron, 61st Cavalry, engaged and defeated an enemy force of 300 Taliban resulting in the death of approximately 150 of the enemy. U.S. force casualties from the battle were eight KIA and 22 WIA. A large number of lessons were learned from that battle.



Screenshot taken from VBS2. Photo courtesy of Bohemia Interactive

The role of terrain and weather was extremely pivotal in the conduct of the battle yet these elements are exactly what are hardest to visualize in the traditional paper format AAR. To better

This video, which I saw, was stunning and helped users to quickly visualize what went right and what went wrong at various points in this complex and lengthy battle. TRADOC also intended to later release the created VBS2 COP Keating scenario so that VBS2 users across the U.S. military could relive the battle in VBS2. With the success of this project more such videos and scenarios have been created and made available to Soldiers and leaders.

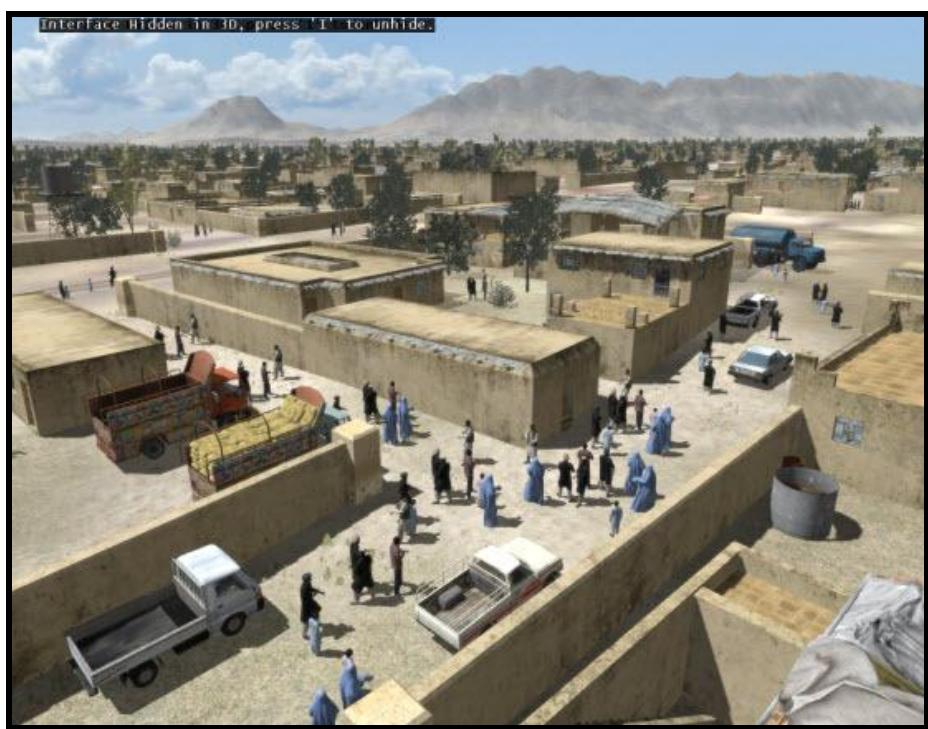


Screenshot taken from VBS2. Photo courtesy of Bohemia Interactive

This effort by TRADOC represents a seminal moment of history for the U.S. Army, although perhaps unrecognized at the time. AARs moved from the traditional paper read only format to a dynamic three-dimensional game environment format that could be rapidly visualized and relived by anyone who wanted to do so. This marked the first time to my knowledge that a commercial-off-the-shelf game had been used to transfer real battlefield knowledge and experience from those that had actually experienced it to those who needed to know what had happened and why in order to avoid making the same mistakes.

In the future I expect that most significant tactical level battles will be replicated in a similar manner in VBS2 as a way of transferring tactical level knowledge and experience from those who obtained it the hard way to those preparing to fight under similar conditions with the intent of achieving positive battlefield outcomes at the lowest possible cost in friendly human lives and material.

From an historical viewpoint this also gives a whole new level of meaning to the term living history!



Screenshot taken from VBS2. Photo courtesy of Bohemia Interactive

VBS2 goes to war

In 2010 the U.S. Army launched an experiment, still ongoing at the time I write this, that had a Combat Battalion taking VBS2 to Afghanistan to be used for training, mission rehearsal and visualization. The 1st Squadron, 38th Cavalry, of the 525th Battle-

field Surveillance Brigade (BfSB) of the XVIII Airborne Corps based at Fort Bragg, North Carolina was the battalion selected for the test. LTC James Gaylord is the Battalion Commander for that unit during its deployment period (2010-2011).

A VBS2 equipment package was configured for the battalion and deployed with that unit to Afghanistan in July 2010. Prior to deployment the unit conducted a series of validation exercises with the VBS2 equipment and software.

Here are summary comments from the exercises sent to me via email from LTC Gaylord and quoted with his permission:

“Operationalizing VBS2 and subsequently deploying the systems to Afghanistan with 1st Squadron, 38th Cavalry Regiment provides the ability to rapidly conduct mission rehearsals and leader certification exercises prior to execution outside of the wire. The ability to get all Soldiers involved in a pre-mission VBS2 exercise allows for modifying enemy scenarios and providing after action review capability with complete situational awareness that otherwise would not be possible with any existing simulations or equipment.

While there is no substitute for full-up rehearsals, often times they are not possible within the confines of a Forward Operating Base and certainly do not have resourced OPFOR and battlefield effects like detonating IEDs that are available in VBS2. Although the Soldiers do not feel the physical exertion in a VBS2 exercise, they can mentally prepare and readily visualize the actions they will take on a given mission or during a certain scenario with enemy contact.

The ability to visualize actions and improve performance is prescribed by the Army's Center for Enhanced Performance. Ultimately, the capabilities offered by VBS2 have tremendous potential to save Soldiers' lives and make them more effective in the conduct of operations. Rather than trying to develop a new system that will take years to field, the Army should focus on improving the communications capabilities in VBS2. An ideal set-up would allow Soldiers to use headsets similar to the ones they use on patrol in conjunction with the VBS2 equipment.

Based on my discussions with the Soldiers who built the exercises as well as those that participated, the training was on the mark and effective."

In the not-to-distant future I predict that eventually most, if not all, military battalions will deploy with such games as part of their equipment deployment load and they will use them in a manner similar to 1st Squadron, 38th Cavalry, of the 525th BfSB.

A lesson in how we can do better in the military classroom using games

During break time on one of the days I was at the VBS2 Administrators Course at Fort Leonard Wood, Missouri I happened to be walking down the hall where the one of the various Career Captains Courses (CCC) was being conducted.

I noticed a number of students working on the floor of the carpeted hall so I stopped for a minute to observe what was going on. Each of the individual students was hard at work on an assigned class exercise that involved documenting and mapping a famous tactical battle that each student would later have to discuss in class.

It was interesting to note that they were accomplishing their assigned projects using old style acetate, poster board and paper flip charts. After the project was completed each student would then discard that work or keep it for themselves, if they were so inclined. My reactions to all of this was "*we can do better than this*" and "*what a waste*" in that order.

Instead of traditional sterile and wasteful exercises like this, that benefit only a few, we should be having the students designing VBS2 scenarios from their own real world platoon level combat experiences as class projects. The best of these scenarios can then be shared across the Army for everyone to learn from. As most of these students are coming off of recent combat deployments we are missing an excellent opportunity here for tactical knowledge transfer that also brings an excellent return on the investment of sending them to a formal course at an Army school.

As a footnote I might mention that as of the summer of 2010 U.S. Army PEO STRI is furnishing VBS2 equipment sets to each of the Army's Career Captains Courses for their use. We just need to connect the dots better here.

Some other lessons I learned about VBS2 usage in the U.S. Army worth passing on

- In general VBS2 scenario map development is the most complex and time consuming aspect of scenario development, although if specialized models are needed for a scenario that element can also be very time consuming. The map tool which comes with VBS2, as of late 2010, does not make this easy and needs to be greatly simplified and automated to the extent possible.
- We need to do a better job of harnessing Soldiers, who often possess excellent and in-depth gaming skills of their own, to generate scenarios and other add-ons for VBS2 instead of depending on expensive defense contractors alone to do this. Sponsoring annual official military wide competitions using either VBS2 Lite or the full version of VBS2 would be the solution to this. This also has the benefit of getting many of these individuals who have recent and often extensive combat experience to convert what they learned and experienced into something every other Soldier can learn from. The reality as of my writing this is that little is being done to exploit organic Soldier talent in this area and we are wasting the opportunity to get them to transfer their knowledge and experience in this way.
- The game is only as good as the quality and of the scenarios fielded with it. The better the quality of scenarios provided the more usage the game will see by Soldiers and units. There also must be a sufficient variety of scenarios provided covering most basic combat situations to ensure that units continue to use it. There were few scenarios provided in the initial fielding of the equipment packages which resulted for some time in very low usage rates for the equipment and software on

many installations. In some cases units used the one or two scenarios that were available and applicable to them and then never came back.

- VBS2 Game sessions need to be treated just like any other normal combat training. If you treat it like a game the Soldiers under you will also do so.
- Unit leadership needs to supervise VBS2 training sessions just as they would do for any live real world training.
- There needs to be one or more forward deployed teams that can de-brief small units on the battlefield for selected significant engagements and who can rapidly turn what is learned and experienced into VBS2 scenarios that can later be distributed to all other Army units both on and off of the battlefield. Such teams would require organic map, modeling, scripting and scenario design expertise. Some of this expertise could be done in a “reach back” mode if need be.
- VBS2 should be deployed to the Battalion level for all battalions although obviously this will be dependent on the necessary resources being on hand in order to be able to do this.
- Providing for a lite version of the game so that individual Soldiers can have a copy was a stroke of genius. Unfortunately as it turned out VBS2 Lite initial distribution by the Army was not very well handled in my opinion and simply consisted of making the game, which was over 4GB in size, available for download from a FOUO CAC card only access site. The large size of the download file, and access requirements, kept many Soldiers from easily being able to obtain this game, especially over slow Internet connections. We need to ensure that every Soldier who wants one gets a copy if we are to get a maximize return on this investment. Every basic trainee, NCO academy student and Officer student should get a copy issued to them on DVD upon entry to that course. Distribution on a DVD as an insert into official military periodicals is also something that should be considered

to get the maximum number of copies out there to the Soldier population. VBS2 Lite should be looked at as one viable method of *crowd sourcing* scenarios.

- Promotion of VBS2 Lite was largely inadequate and still remains so as of the writing of this chapter. Too many Soldiers are still not aware that it is available and they can use it on their home computer systems.
- Senior level buy-in at game deployment locations needs to be accomplished prior to the actual fielding of the game equipment and software. Lack of this significantly slowed acceptance and utilization of VBS2 in formal school training within the U.S. Army during initial VBS2 package fielding. Without senior level emphasis subordinates often don't feel obligated to use it, or it's not a priority.
- User oriented plans and SOPs for integrating VBS2 into institutional and unit training efforts must exist prior to actual fielding of the equipment at military units and schools. An understanding and methodology for how VBS2 fits into and is best utilized in existing formal institutional and unit training was sorely lacking at the local level during and after fielding at many locations in the U.S. Army. Basically "*now that we have it, what do we do with it?*" being the major question asked after the initial equipment fielding. This is often a problem with integration of new technologies as the technical expertise and understanding of those technologies at local levels often does not exist in the beginning which retards utilization and acceptance. In these cases guidance in the forms of plans and SOPs must often come externally from those who do have that understanding and have the expertise for early success to be achieved.
- People will be initially concerned that games will take too much scarce training time or require extensive lesson plan modification or preparation to be practical in institutional or unit training. I see this primarily as an education problem for the most part. At the instructor and training management level they need to know how to

best utilize VBS2 within existing training, where it fits in and how. That understanding was largely lacking at the time VBS2 was initially fielded to U.S. Army schools and as a result a lot of local resistance was often experienced and sometimes still is.

- During initial VBS2 deployment there was too much emphasis on the technological side to the exclusion of dealing with the human dynamics factors involved (resistance to the concept of gaming by "old hands", acceptance, training integration, how this fits into training, etc.). The problems being encountered are largely human ones and not technological.
- Don't talk gaming, talk training *capability* instead.
- Replace existing lesson plan sterile classroom exercises and problems with ones requiring the use of VBS2. Many times this can often be done with little or no modification to existing lesson plans. This achieve three things:
 - Gets students familiar with VBS2.
 - Encourages students to take their own real world experiences and knowledge and convert them into VBS2 scenarios which make for much more realistic and interesting exercises and training problems. Use of VBS2 presents unique and outstanding possibilities for both social and collaborative classroom learning as group projects either during class or possibly after hours as homework which keep students active and engaged.
 - Drives acceptance and use from the level the game is targeted at.

Summary

Game technology is a new and powerful addition to our military knowledge transfer toolkit. If used correctly it will allow us to rapidly transfer experiential based combat knowledge from those who experienced it first hand to those who may have to in the near

future. Those military personnel and organizations who deal with lessons learned must be willing to embrace and systematically exploit these games in order to maximize knowledge transfer for the benefit of Soldiers and units. The military that does this the best, and consistently, will have a major edge on the battlefields of the 21st Century and beyond.

Missed Opportunities

Missed opportunities

In the five years I worked for the Battle Command Knowledge System (BCKS) at Fort Leavenworth, Kansas as a contracted senior knowledge manager and facilitator I witnessed many missed knowledge transfer opportunities throughout the U.S. Army. This chapter documents what I witnessed and how those opportunities could have been exploited to the benefit of the U.S. military.

Retirees

When a Soldier or DA civilian retires from the military they have at least twenty years of hard earned experience and knowledge in their profession. This experience and knowledge represents a substantial investment to the Department of Defense (DOD). Prior to the Internet when these individuals retired they took all their knowledge and experience with them never to be heard from again in most cases. The technology simply did not exist to allow them to continue contributing to the military in some capacity often because they were remote from military installations. On the policy side there was never any effort made by the military services to try to engage retirees and allow for continued knowledge and experience transfer to occur. This resulted in a serious knowledge and experience loss to the military.

In 1995 the Internet matured to the point that it gave us the possibility and technology to allow retirees to stay connected to the military if they desired to do so. Soon thereafter the various military services created online portals such as the Army Knowledge Online (AKO) portal and allowed retirees to create and maintain accounts on them. Thanks to such efforts today's retiree can now keep up with what is happening in the military and continue to maintain contact with the professional and social network they formed while in the military, and many do. Unfortunately there is

still no systematic formal effort to exploit this enormous pool of knowledge and expertise to the advantage of still serving Soldiers.

In 2004 BCKS was created at Fort Leavenworth. One of their first tasks was to start up and operate a variety of military communities of practice. These communities of practice were often profession based and while *for official use only* (FOUO) allowed for retirees to access them. The Logistics Network (LogNet) was one such community of practice. In January 2005 I was an Army retiree who happened to run across this online community on the Internet and had a burning desire to still make a difference in the Army logistics world. I immediately joined this community of practice and started to contribute where and when I could and in the process making several significant knowledge and experience contributions to my fellow logistics soldiers based on my previous substantial logistics and supply experience. I also mentored soldiers and answered questions that were posted by other members. In mid-February of 2005 I was approached by the Army forum leader for LogNet and asked if I would like to come on board full-time as an Army contractor for the purpose of facilitating that community of practice. I went to work for BCKS as a community of practice facilitation contractor on March 1st of 2005.

In the summer of 2005 when BCKS brought up the issue of whether retirees should be allowed to continue accessing the FOUO military communities of practice that had been created I argued passionately and successfully, based on my own personal experience, for continued access. This was accepted by BCKS and access for retirees still continues as of the writing of this book (Fall 2010). Unfortunately the current climate of overzealous military security may end this access for retirees to all online military FOUO level sites some time in 2011, which I believe will be a costly mistake to the Department of Defense.

While military retirees currently have access to military communities of practice there is no formal effort to recruit or engage these retirees to continue making knowledge and experience contributions to these communities, nor are they notified through the retiree system that they can become members of them and are encouraged to do so. As a result few retirees are found on

these communities of practice although the ones that are often make a big difference.

What makes military retirees a knowledge and experience transfer resource worth exploiting? Here are some good reasons:

- They have reached a level of knowledge and experience that makes them excellent mentors for less experienced and knowledgeable personnel.
- Often have more time to help others than when they were on active duty.
- Many retirees still want to make a difference to their service and to fellow soldiers and have the capability and desire to do so.
- By continuing to maintain contact and contribute they can help to bridge continuity gaps in many military organizations.
- Have shown through long service that they can be trusted to act professionally and know how to safeguard FOUO or even higher information.

What must we do to maximize knowledge and experience transfer from military retirees? Here is what I recommend:

- That all military personnel or DA civilians who are about to retire receive counseling to encourage them to continue contributing by becoming members of the military community of practice that serves their pre-retirement military profession.
- That's all previous military or DA civilian retirees be encouraged periodically by the U.S. military retirement system to consider contributing by joining a military community of practice that serves their former military profession.
- That all military or DA civilian retirees continue to be allowed access to FOUO level military communities of practice and other online knowledge sharing sites such as milWiki.

- That an incentive program be set up to recognize those retirees that make significant knowledge and experience contributions on military communities of practice.

Recognizing excellence

Every military organization has a variety of methods and techniques for recognizing excellence among its personnel. Examples of this abound and can range from competitions to the award of medals. While soldier recognition is very important there is little effort to exploit these efforts as a military knowledge transfer opportunity, which they are.

Why do we recognize excellence and the importance of role models? Generally there are two primary reasons. These are:

- To reward the soldier.
- To set an example that hopefully other soldiers will want to emulate.

When a soldier does something that merits recognition by the military he or she becomes a potential role model. Before we go further lets define what a role model is. Here are two definitions from the Internet:

- Someone worthy of imitation.
- A person who serves as an example, whose behavior is emulated by others.

While we recognize the act that the soldier has performed that has made them a potential role model we often fail to analyze what experience and knowledge it took for the soldier to be able to do what they did in the first place. It is with analysis of potential role models that the opportunities for knowledge transfer occur.

Role models often have a great impact and influence on our lives and an excellent example would be your own parents. One key characteristic of such role models in our lives is that they often take the time to transfer their knowledge and experience to us. Unfortunately military institutions do little to exploit the use of role

models to benefit soldiers or even often to recognize that such value exists. If you want Soldiers to excel then you must show them a role model that you want them to emulate.

Now it's time to tell some stories that will illustrate real-world US military examples I have seen of excellence recognition that so far have not been exploited for knowledge transfer purposes and should be.

Missed Opportunity #1 – The Supply Excellence Award

Every year the U.S. Army Quartermaster School (USAQMS) at Fort Lee Virginia sponsors an Army wide competition called the Supply Excellence Award (SEA). The official objectives of the SEA are:

- Enhance readiness of all Army units
- Enhance the Command Supply Discipline Program
- Provide a structure for recognition of group and individual soldiers
- Perpetuate group competition
- Increase public awareness of supply excellence in the U.S. Army

This SEA award is given at various organizational levels such as unit supply, property book, battalion supply and supply support activities (SSA) in the Active Army, Army Reserve and Army National Guard both in the United States and overseas. Units are nominated by higher level commands for this award and personnel are sent out to evaluate and rate those units. At the end of the competition period winners are announced and receive both awards and Army wide recognition.

The USAQMS dedicates substantial funding and personnel resources to this annual competition to include a section staffed by full time senior warrant officers and NCOs who spend a lot of time travelling and conducting evaluations. While competition is a good thing in general, and recognition of Soldier excellence is important, there is often little that comes out of this beyond some example SOPs and other similar documents. Considering the level of

investment involved we need to ensure that such competitions benefit soldiers Army wide by exploiting what was learned during the evaluation process about those who won the award. The missing element that needs to be a part of this is knowledge transfer.

Those who win the SEA should be considered potential role models for all their peers. When the awards are made the Army apparatus that deals with logistics lessons learned should be engaged in the process to do the following:

- Perform a complete analysis of the winners supply operation and identify potential best practices and patterns of personal and professional behavior that led to their success in winning the award. The analysis should answer this question: What made this operation more successful than the average supply operation?
- Conduct a full in-depth multimedia interview of the winner covering what was learned during the analysis and their supply operation. Soldiers need to see and hear from the winner as well as see the actual supply operation that won the award.
- Post the multimedia interview on the online SustainNet community practice for access by all military supply personnel who are members of that community. This will allow less successful or experienced supply personnel to understand what right looks like and how to get there. This is how we transfer knowledge and experience from those supply personnel who have it to those supply people who need.
- Use the interview as part of supply operation training at the USAQMS to teach new supply personnel what success looks like.

Missed Opportunity #2 – The NCO of the Year Award

The U.S. Army sponsors an Army wide competition annually for the noncommissioned officer (NCO) of the year award. This also happens at subordinate commands as well. The purpose of

this competition is to find and recognize outstanding NCOs. At the end of these competitions winners are announced, awards made and recognition given. As with the SEA there is little attempt to obtain knowledge transfer from these competitions and the effort that goes into the process of identifying and evaluating award candidates

Those who win this award at the highest levels should be considered potential role models for all their NCO peers. When the awards are made the Sergeants Major Academy section that deals with NCO lessons learned should be engaged in the process to do the following:

- Perform a complete analysis of the NCO and identify potential best practices and patterns of personal and professional behavior that led to their success in winning the award. The analysis should answer this question: What made this NCO more successful than the average NCO?
- Conduct a full in-depth multimedia interview of the winner covering what was learned during the analysis of the NCO and how they perform. Soldiers need to see and hear from the winner as well as see the NCO in action.
- Post the multimedia interview on the online NCONet community practice for access by all military NCOs who are members of that community. This will allow less successful or experienced NCOs to understand what right looks like and how to get there. This is how we transfer knowledge and experience from those NCOs who have it to those NCOs who need.
- Use the interview as part of NCO training at the NCO Academies to teach new NCOs what success looks like.

Missed Opportunity #3 – Best Sapper Award

The Best Sapper Competition, sponsored by the U.S. Army Engineer School (USAES) at Fort Leonard Wood, Missouri began in 2004 as a means for service members to show off their combat

engineering skills and is conducted annually. The two-day competition at Fort Leonard Wood is open to soldiers serving in the combat engineer career field or for any Soldier, Sailor, Marine or Airman who wears a Sapper tab. Organized into two-person teams, the competition's concept is to not only determine the next "Best Sapper" team, but to challenge and test the service members' knowledge, physical prowess and mental fortitude through a series of very grueling events. The competition is the Engineer equivalent of the Best Ranger Competition, showcasing the Army's elite Soldiers in combat engineering military occupation specialties.

At the end of the competition awards are made and recognition is received as with all military competitions. Unfortunately in a manner similar to the examples mentioned in this chapter little to no knowledge or experience transfer occurs.

Those who win this award should be considered potential role models for all their combat engineering peers. When the awards are made the Engineer School section that deals with combat engineering lessons learned should be engaged in the process to do the following:

- Perform a complete analysis of the winning team members and identify potential best practices and patterns of personal and professional behavior that led to their success in winning the award. The analysis should answer this question: What made this combat engineer more successful than the average combat engineer?
- Conduct a full in-depth multimedia interview of the winners covering what was learned during the analysis of the combat engineer team and how they performed. Soldiers need to see and hear from the winners as well as see the team in action during the best sapper events.
- Post the multimedia interview on the online Protection-Net community practice for access by all military combat engineers who are members of that community. This will allow less successful or experienced combat engineers to understand what right looks like and how to get there. This is how we transfer knowledge and experi-

ence from those combat engineers who have it to those sappers who need it.

- Use the interview as part of combat engineer training at the Engineer School to teach new sappers what success looks like.

Missed Opportunity #4 – Awards for valor and heroism

While we expend significant effort to collect lessons learned from units that perform heroically on the battlefield we do almost nothing at the individual level for the same thing. Every Soldier who wins a medal for valor or heroism on the battlefield is a potential role model for his or her peers. If you want Soldiers to perform at this level you must give them role models that have done it already.

When the awards are made those who deal with lessons learned should be engaged in the process to do the following:

- Perform a complete analysis of the winning Soldier and identify potential best practices and patterns of personal and professional behavior that led to their winning the medal. The analysis should answer this question: What made this Soldier function at this level?
- Conduct a full in-depth multimedia interview of the medal winner covering what was learned during the analysis of the combat action for which the medal was made and how that individual performed during that combat action. Soldiers need to see and hear from the medal winner what took place as well as enough visual detail to understand why the Soldier received the medal. We are basically de-constructing the individual's portion of the overall battle action that occurred.
- Post the multimedia interview on the online military community practice of the profession the Soldier is part of for access by all fellow military professionals who are members of that community.
- Use the interview as part of school training efforts to teach new Soldiers what valor and heroism looks like

Summary

In a time of fiscal austerity competition for competitions sake or recognition for recognitions sake is just not enough to justify the resources that often go into these events. By incorporating knowledge and experience transfer as part of these processes we show tangible benefit to other Soldiers Army wide that come from the knowledge and experience transferred from the individuals involved. This provides solid justification for the considerable funding and resources often invested in such events.

While I have given some examples in this chapter there are many, many more such military events not touched on here that could benefit in a similar manner from the application of knowledge transfer techniques as part of the overall process for that event. Doing so will be a win-win for all involved and produces a tangible return on military investment.

Ten Military Knowledge Sharing Principles

- We will voluntarily share what we know and have experienced with others.
- We will make time to help others learn
- We will encourage open and rigorous dialogue, discuss and explore assumptions, and speak our mind respectfully.
- We shall see if what we are about to embark on has been done before rather than create things from scratch.
- We will borrow ideas shamelessly (with attribution) and not suffer the 'not invented here' syndrome.
- We will take time to learn from our successes and failures.
- We will promote cooperation, trust and active participation in project teams, task forces, networks and units.
- We shall actively look outside our own discipline in search of ideas, concepts and approaches that can be adapted and applied to meet our goals.
- We will recognize others for their intellectual effort and willingly share the kudos.
- We will not hoard knowledge or keep it only to ourselves.

**There are adapted from an original blog article titled Knowledge Sharing Principles by Shawn Callahan at www.anecdote.com and published here with his kind permission.*

Knowledge Transfer Checklist

☐ In garrison Soldiers are educated about what knowledge transfer is and why it is important to both them and the unit. Soldiers who have recently joined the unit are briefed on this during the in-processing phase.

☐ In garrison structured socialization is periodically used where possible and practical in order to build trust and encourage knowledge transfer among Soldiers.

☐ Leadership at all levels within the unit has created and maintains a casual knowledge sharing culture that encourages knowledge and experience sharing among its Soldiers.

☐ Those that are not willing to share what they have learned or experienced are counseled by leadership and encouraged to do so.

☐ If available, portable digital video recorders are issued to crews, squads or platoons about to perform a battlefield mission, after being instructed to use it to record anything of significance during the mission.

☐ On combat deployments a robust de-briefing process is in place to ensure that what crews, section, squads and platoons learn or experience on the battlefield is quickly discovered.

☐ If issued, portable digital videos devices are recovered during the debriefing process. This video is then analyzed, and if found useful, disseminated both horizontally and vertically to all who need to know.

- ☐ What is learned during the de-briefing process is quickly disseminated both horizontally and vertically to all who need to know, and entered into any tactical knowledge sharing device or system on hand such as TIGR.
- ☐ Soldiers are encouraged to make use of professional online military communities of practice for professional help and development.
- ☐ Soldiers are encouraged to make use of available military Wikis for professional help, collaborative publishing and knowledge sharing.
- ☐ The unit uses available military games both during training and on deployments.
- ☐ Where possible scenarios for military games are developed by the unit based on battlefield lessons learned, and then disseminated both horizontally and vertically.
- ☐ In individual or collective training group oriented problems and exercises are used, wherever possible and practical, to encourage social learning and informal knowledge transfer.
- ☐ In garrison, where possible and practical, have email free days. This forces people to communicate human-to-human and helps to build trust. Over time you will be amazed at how much this improves communications flow in your organization. Apply this last item with a healthy dose of common sense or it can backfire!

Recommended Reading

Here is my list of recommended additional reading for those working with military knowledge transfer:

- *Communities of Practice: Learning. Meaning and Identity* by Etienne Wenger
- *Cultivating Communities of Practice* by Etienne Wenger, Richard McDermott and William Snyder
- *Leveraging Communities of Practice for Strategic Advantage* by Hubert Saint-Onge and Debra Wallace
- *Company Command: Unleashing the Power of the Army Profession* by Nancy Dixon, Nate Allen, Tony Burgess, Pete Kilner and Steve Schweitzer
- *Common Knowledge: How Companies Thrive by Sharing What They Know* by Nancy Dixon
- *Working Knowledge: How Organizations Manage What They Know* by Thomas H. Davenport and Laurence Prusak
- *The Idiots Guide to Knowledge Management* by Melissie Clemmons Rumizen
- *The Starfish and the Spider: The Unstoppable Power of Leaderless Organizations* by Ori Brafman and Rod Beckstrom
- *Virtual Teams: People Working Across Boundaries with Technology* by Jessica Lipnack and Jeffrey Stamps
- *Enabling Knowledge Creation: How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation* by Georg Von Krogh, Kazuo Ichijo and Ikujiro Nonaka
- *Wikipedia: The Missing Manual* by John Broughton

About the Author



R.A. "Bob" Dalton retired from the U.S. Army in 1993 after a successful and diverse 21 year career. During this career he spent 7 years in the Adjutant General Branch, 5 years in the Engineer Branch as a mechanized Sapper/Squad Leader, and the remaining 9 years in the Quartermaster Branch.

Upon retirement he went full time in the IT industry as a software developer and engineer. From 1998 to 2005 he was President and owner of the Digital Logistics Software Development Company based in Arkansas. He has personally developed and authored over 30 commercial and military Windows software applications, many of which are still in use by the military today.

In March 2005 at the invitation of the HQDA G-4 office he left private business to become a contract facilitator for the LogNet Community of Practice at the Battle Command Knowledge System (BCKS) at Fort Leavenworth. During his two years as the Facilitator of LogNet this community of practice went from 500 members to over 18,000 and became one of the most successful military communities of practice in the Army. From 2007 to August 2010 he was a Computer Science Corp contract facilitator and senior knowledge manager at BCKS working on a number of innovative knowledge transfer projects.

He is a Certified Knowledge Management Professional (CKMP) by the Knowledge Management professional Society and a Certified Knowledge Manager (CKM) by the International Knowledge Management Institute. In December 2007 he was certified as a Master Facilitator by the Battle Command Knowledge System (BCKS) at Fort Leavenworth.

Bob lives in Harrison, Arkansas in the middle of the beautiful Arkansas Ozarks with Maria, his wife, where he has been tele-commuting from an extremely sophisticated home office since March 2005.

Bob has been involved with military gaming and simulations since 1970 as both a hobby and personal interest. Other interests are gardening, military history (WWII East Front), science fiction and he is an avid collector of great DVD films (several hundred and counting).